TITLE: Measurements and Methods in Environmental Nanotechnology in Terrestrial Systems

DESCRIPTION: The exciting properties of nanotechnology have already resulted in their incorporation into consumer goods with increasing applications expected in future years. This may, in turn, result in their release into the environment. One of the principal challenges regarding understanding the risks associated with the release of nanoparticles is that new measurement methods are often needed both for the detection of these materials and for the assessment of their corresponding risks. The goal of this symposium is to keep the researchers in our field updated on the current research progress related to method development in environmental nanotechnology. This symposium will focus on but is not limited to i) applications of analytical methods and experimental approaches that enable analyses of the environmental fate, surface characteristics, quantification, aggregation, and transformations of nanoparticles in environmentally relevant biotic or abiotic media, and ii) method development for assessing the ecological risks of these materials through the application of new or uncommon toxicology techniques to nanoecotoxicology, identification of important potential artifacts or measurement considerations in nanoecotoxicology, or investigations of the extent to which previous standard methods can be applied to studies with nanoparticles.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Elijah Petersen [186624]

Brian Mader [185492]

SUBMITTER: Elijah Petersen

ADVISORY GROUP: Nanotechnology Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: "One Health": Opportunities for SETAC Leadership in Integrating Environmental, Human, and Animal Health

DESCRIPTION: A full-day session is proposed to discuss the "One Health" concept, explore the role of SETAC in further developing environmental quality connections within the "One Health" framework, and expand collaborations among scientists concerned with the well-being of natural ecosystems and human health. "One Health" is a worldwide concept that encourages and expands interdisciplinary collaborations in research, clinical practice, policy, and communication related to health of people, other animals and the environment. The term is relatively new (~2004), and it is increasingly common to see "One Health" included by name in inter-institutional research partnerships, conferences, communications, and organizational frameworks - particularly those championed by the human health and veterinary medical communities. Two observations drive this proposed session. First, "One Health" as a term is seldom used in SETAC communications despite our long history of interdisciplinary environmental science (i.e., we do that work; we just call if by other names in our journals, newsletters, and presentations). Second, environmental quality is the least developed component in recent collaborations organized under the "One Health" concept emphasizing human: wildlife or human: food connections. One Health expertise is strong within SETAC, particularly amongst members of SETAC's Wildlife Toxicology, Human Health Risk Assessment, Ecosystem Services, Sustainability, and Ecological Risk Assessment advisory groups. Here we propose a session to bring together like-minded researchers to share and discuss their views and experience particularly on the role of environmental quality in emerging "One Health" partnerships. This proposition follows successful "One Health" sessions we have run during last two SETAC NA meetings, as well as an ET&C Focus Article recently published (35: 2383). Here we propose to expand upon those by involving a wider range of SETAC members (i.e., more advisory groups and geographical units), and emphasizing submissions of well-developed environmental, human, and animal health projects from across the world as examples of the promise of this collaborative approach. While open to all, we will anchor the session with a few invited talks on global concerns that would benefit from more transdisciplinary approaches to problem solving such as climate change, environmentally-medicated carcinogenesis, sentinels in disease surveillance, water scarcity, and food security/safety. In addition, and as with previous sessions, invited speakers will explain the "One Health" concept's origins and status and the relationship of "One Health" to other organizational frameworks (EcoHealth, conservation medicine, etc.). We will also cover the utility of "One Health" as an organizational framework in government agencies, and its application in research partnerships.

TRACK: Linking Science and Social Issues

CHAIRS:

Nil Basu [162871]
Frances Nilsen [305987]
Benny Chefetz [307204]
Thomas Augspurger [162001]
Christina Baghdikian [305187]

SUBMITTER: Nil Basu

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: 21st Century Approaches for Capturing Diversity in Species Sensitivity to Chemicals

DESCRIPTION: There is growing recognition in toxicology and risk assessment that sole reliance on model organisms for evaluation of chemical effects is insufficient to ensure protection of all species in the environment. The goals of this session are 1) to highlight the latest methods for examining variation in species sensitivity to chemicals, and 2) identify the biological basis for such variation. Contributions are encouraged that describe the latest empirical and computation approaches for measuring and predicting variation in species sensitivity - including in vitro assays, toxicity extrapolation models, and population models. Of particular interest are presentations that highlight the strengths, uncertainties, and future directions for method development. Descriptions of studies that elucidate the biological basis for sensitivity variation across levels of biological organization, such as those that link species variation in adsorption, distribution, metabolism, excretion and/or mechanisms of toxicity to effects at the whole organism or population levels, are welcome. The overall intent of this session is to stimulate further research in this area, promote awareness regarding the importance of species variation in toxicology, and generate discussion about useful approaches for the evaluation of potential impacts of chemicals across the whole range of biodiversity.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Scott Glaberman [300788]

Carlie LaLone [193245]

SUBMITTER: Scott Glaberman

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: A 50 Year Retrospective of Scientific Contributions of the Duluth Water Quality Lab to Environmental Toxicology and Chem

DESCRIPTION: A 50 Year Retrospective of Scientific Contributions of the Duluth Water Quality Lab to Environmental Toxicology and Chemistry Conveners: G. Ankley, D.R. Mount, J. Nichols About 120 miles north of Minneapolis-St. Paul on the shores of Lake Superior in Duluth, MN a water quality testing lab commenced operations in 1967. The lab subsequently became one of the charter research facilities in the USEPA's Office of Research and Development, with an initial and ongoing mission of developing approaches for assessing the potential effects of contaminants on freshwater aquatic ecosystems. Over the years, research at the lab has provided the critical scientific underpinnings for many of the approaches currently used worldwide to assess contaminant risks to aquatic life. This session aims to chronologically present several of these important developments, starting from initial work at the lab through ongoing efforts. The talks will describe novel scientific contributions in several key topical areas related both to toxicology and chemistry, the impacts of these contributions in regulatory ecotoxicology and, importantly, where future efforts should lie. Contributions to this session will be made by both past (retired) and current USEPA scientists from the Duluth lab, as well as by external (non-USEPA), internationally-recognized experts in several of the topical areas. Given the nature of this session, we anticipate that all of the talks will be invited. Several (but not all) of the speakers suggested below have been approached about possibly participating in the session. When/if the session is approved, the other suggested topical speakers will be contacted; if they are unavailable, alternatives will be approached who are--to the extent possible--equally qualified to address a given topic(s). (1)Rivers on Fire: Early Days at the Duluth USEPA Lab (Don Mount) (2)Aquatic Life Criteria: The 1985 Guidelines and Beyond (Russ Erickson) (3)Bringing Biology to the Table--Development of Effluent and Sediment Toxicity Tests to Support Regulation and Risk Assessment (Dave Mount) (4)Understanding and Predicting Metal Bioavailability (Bill Adams) (5)Contaminant Dynamics in Aquatic Species--the Critical Role of PB-PK Models (John Nichols) (6)Predicting Toxicity from Chemical Structure: The Narcosis Story (Dom DiToro)) (7)A New Toxicological Challenge: Environmental Endocrine Disruptors (Gary Ankley) (8)Ecotoxicology in the 21st Century--AOPs, HTT and other Acronyms (Dan Villeneuve)

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Gerald Ankley [161727]

SUBMITTER: Gerald T. Ankley

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: Given the proximity of the Duluth EPA lab to the MSP SETAC meeting this might be considered a logical Special Symposium of regional interest.

TITLE: Advances in environmental fate and exposure modeling

DESCRIPTION: Environmental fate and exposure models are widely used to investigate transport and fate processes as well as to estimate chemical concentrations in air, soil, water, sediment, biota and humans. Although their use has long been established in both research and regulatory practice, the wider range of chemicals under scrutiny, including substances with "unusual" physicochemical and environmental fate properties, and the quest for increased ecological realism in higher tier exposure assessment are pushing the boundaries of traditional modelling approaches. For instance, modelling techniques have recently been developed for contaminants such as engineered nanoparticles, ionizable, surface-active substances, polymers, and microplastic to assess environmental fate and exposure. There is a growing trend towards the application of GIS-supported, spatially explicit fate models, which has enabled enhanced parameterization of spatial-temporal variability of environmental processes that influence phase partitioning, transport and bioavailability. These models, however, require high-resolution spatial and temporal data for parameterisation, which is often unavailable or difficult to retrieve. An additional challenge relates to the development of tools to estimate chemical emissions, both for screening and higher tier assessments. Lastly, the application of recent advances in modelling tools for chemical risk assessment and management remains challenging, particularly in the regulatory context. This session focuses on recent development in environmental fate and exposure modelling. Particularly welcome are studies that address scientific and regulatory challenges towards the implementation of advanced modelling techniques in practical applications for chemicals risk assessment and management. Topics of interest include the extension of the chemical domain of applicability of traditional environmental fate and exposure models, chemical property and emission estimation methods, spatial and temporal explicit models (e.g. GIS supported), the integration of multidisciplinary models, the design and coordination of monitoring activities for parameterization and evaluation of models, sensitivity and uncertainty analysis, and generally the implementation of good modelling practice in the development, evaluation and use of environmental fate and exposure models.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Todd Gouin [185189]

Matthew MacLeod [178342]

SUBMITTER: Todd Gouin

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Exposure Modeling Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Advances in the Development and Application of Toxicity Reference Values

DESCRIPTION: Forum for the development and updating of TRVs and for approaches for making the best of the existing data

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Tamara Sorell [169507]

Christopher McCarthy [162513]

SUBMITTER: Tamara L. Sorell

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecological Risk Assessment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: Toxicity Reference Values (TRVs), which characterize the safe exposures to ecological receptors, are critical variables in the ecological risk process. Broadly interpreted, TRVs may take the form of either an intake (dose) or exposure (concentration). In some cases ecological risk conclusions that are underlain by TRVs can be the main driver for important risk management decisions. Risk characterization results developed from the use of TRVs are often used out of context to inform risk management decisions without significant consideration to the details behind the TRV. One problem in relying on typically cited TRVs is their age; information used for many TRV has not been updated in years or decades. Also, older studies are far less likely to have been designed with an application toward risk management. Many of the published TRVs do not reflect environmental exposures due to contaminant form, route of exposure or tested species. Biased TRVs can lead to conclusions that do not represent true risk and may drive inappropriate risk management. Another problem is that many TRVs used for risk characterization are no observed adverse effect levels (NOAELs) and lowest observed adverse effect levels (LOAELs). Challenges with using NOAELs (and LOAELs as TRVs are well documented, including a lack of understanding as to the magnitude or likelihood of adverse effects (especially unbounded NOAELs). In spite of all these challenges with TRVs for historic pollutants, only a limited amount of new toxicological studies are being published. In addition, there is a growing need to address emerging contaminants such as perfluorinated compounds, pharmaceuticals, nanomaterials, and endocrine disruptors. This session is intended to serve as a forum for the development and updating of TRVs and for approaches for making the best of the existing data we have. Participants will be encouraged to present updated technical information to refine or to bound the uncertainty around existing TRVs, successful application of new methods for TRV development, development and use of alternate effects thresholds, addressing concepts such as differing species sensitivities to contaminants, as well as research for new or emerging contaminants.

TITLE: Advancing the Adverse Outcome Pathway Concept - An International Horizon Scanning Approach

DESCRIPTION: The adverse outcome pathway (AOP) framework has gained international traction as a systematic approach for capturing existing knowledge to transparently link mechanistic data to apical toxicity endpoints as a means to inform research and regulatory assessments. While the AOP concept has matured and evolved significantly since its introduction in 2010, there was the recognition that a survey of the broader scientific community would be useful in identifying shortcomings and guiding future initiatives for the AOP framework. To that end, a 'Horizon Scanning' exercise was conducted to solicit questions from global scientific communities concerning the perceived challenges and/or limitations that must be addressed to realize the full potential of the AOP framework in research and regulatory decision-making. Questions submitted from all sectors and from across the globe were used to identify key themes that, if addressed, would significantly advance development and application of the AOP framework. Therefore, a SETAC Pellston Workshop was held in Cornwall, Ontario, in April 2017 to begin exploring themes and answering associated key questions identified. This session serves as a platform to summarize both the results from Horizon Scanning exercise and to describe the outcomes of the Pellston workshop. Presentations that advance the science or application of the AOP framework, though were not involved directly in the Pellston workshop, will also be considered. Specifically, presentations will cover topics including the development and application of AOP networks and quantitative AOPs, and the status of and future needs for application of the framework in regulatory decision making. Furthermore, talks will explore a roadmap developed during the workshop to enhance awareness of, involvement in, and acceptance of the AOP concept by regulatory agencies, scientists, and other stakeholder groups. Finally, presentations will review frequently asked questions identified during horizon scanning and address common misunderstandings pertaining to the AOP framework.

TRACK: Regulatory Directions

CHAIRS:

Markus Hecker [161829]

SUBMITTER: Markus Hecker

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: This session is focusing on the outcomes from a SETAC Pellston Workshop on "Advancing the Adverse Outcome Pathway Concept – An International Horizon Scanning Approach" held in Cornwall, ON, in April 2017. While there will be reserved spots for presentations of the outcomes/products from the different working groups that met during the workshop, we also encourage submissions on this topic by the general SETAC community.

TITLE: Adverse effects of chemicals on the microbiome

DESCRIPTION: The microbiome has emerged as a significant interface between environmental exposure to exogenous stressors and disease outcomes. Recent evidence suggests that the microbiome can be modulated by chemical exposures. Subsequent disruption of this important symbiotic relationship between host and microflora can lead to adverse effects associated with nutrient processing, behavior, development, and immune function. Critical research is needed to better explore the relationship between exogenous stressors, host organism, and the microbiome, as well as how contaminant-induced shifts in the microbiome may affect host responses to external factors. This session invites studies that investigate microbiome responses to environmental contaminants, including those that report on microbial richness and diversity in relation to phenotypic endpoints that are related to organism health. These studies will increase understanding of how environmental contaminants regulate host-microbiome interactions, an emerging area that requires further investigation.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Joseph Bisesi [180754]
Christopher Martyniuk [186763]
Joe Griffitt [187446]
Ondrej Adamovsky [302765]

SUBMITTER: Joseph H Bisesi

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Alternative Approaches to Animal Testing for Ecotoxicity Assessments

DESCRIPTION: With this session, new and novel approaches to the use of vertebrate species (e.g. fish, amphibians, and birds) for ecotoxicity tests will be explored, with a focus on understanding the role that various animal alternatives have in supporting environmental hazard and risk assessments of chemicals. Numerous technical and regulatory challenges need to be considered during the future integration of the traditional 3Rs (reduction, refinement, and replacement of animal tests). These challenges include consideration that any alternative approach is robust/reliable, repeatable and most importantly, appropriate for regulatory use. In Europe, the need for alternative approaches has been primarily driven by certain legislations such as the EU Directive on the protection of animals used for scientific purposes, the UK Animals (Scientific Procedures) Act, the 7th Amendment to the EU Cosmetics Directive, selected legislation in Germany and the European chemical legislation REACH. As an example, in REACH it is possible in principle to fulfill 'standard information requirements' by other means than new experimental studies: existing non-GLP and non-guideline data; weight of evidence WoE approaches; QSAR predictions; in vitro methods; grouping of substances and read-across approaches. This session will explore new approaches towards developing and adopting efficient chemical (including effluents) assessments related to both acute and chronic ecotoxicity endpoints. Enhanced predictive models (e.g. QSARs) and new developments for in vitro and in vivo models to support environmental risk assessments will also be a focus. Some of the adaptations may also be based on novel approach methodologies such as Adverse Outcome Pathways (AOPs) and/or OMICs. This session will explore new approaches towards developing and adopting efficient chemical assessments and also the hazard assessments of effluents for both acute and chronic ecotoxicity endpoints. We encourage presentations that include read-across, enhanced predictive models (e.g. QSARs) and new developments for in vitro and in vivo models to support environmental risk assessments. Additionally, progress relating to the generation of new bioaccumulation data using alternative approaches, particularly for PBT assessments, or how the various approaches or methods could be accepted into a regulatory framework and/or integrated test strategy are also encouraged. We encourage discussions on how to address uncertainties, challenges, advances and needs for further development for alternative approaches particularly in support of understanding potential limitations/advantages. And finally, we encourage discussion of how any new approach could be accepted into a regulatory framework or integrated test strategy. This session is organized by the SETAC Animal Alternatives in Environmental Science Interest Group (AAES).

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Adam Lillicrap [177692]
Amy Beasley [300545]
Scott Belanger [160616]
Josh Butler [195156]
Marlo Sellin Jeffries [177715]

SUBMITTER: Teresa J Norberg-King

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Animal Alternatives in Environmental Science (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: We are expecting many submissions for this session, as we had 44 last year and we had a full day session. Adam and Teresa are co-chairs of the Animal Alternatives in Environmental Science Interest Group, and as such, we've organized the session with four co-chairs to moderate the session but we will be included in the organization of the session to hold to the 'mission' of the interest group.

TITLE: Applying lessons from nanomaterial research to micro- and nanoplastics in the environment

DESCRIPTION: Nanoparticles, microplastics and nanoplastics are all emerging contaminants that have been shown to have ecological effects. While plastics are ubiquitous in all ecosystems, engineered nanoparticles have been more extensively studied because of their wide spread use and benefits in manufactured products. Scientific literature on the analysis, fate and effects of nanoparticles while not complete, is more extensive than the literature on microplastics, and certainly nanoplastics. Both plastics and other engineered nanomaterials share particulate characteristics of self- aggregation, dispersion, sedimentation and suspected movement through biological membranes. Given this, information from nanomaterial research can inform research on micro- and nanoplastics. This session looks at the lessons learned about the physical aspects, fate and effects of particles in one field that can be readily transferred to another and also explores the differences between the fields. The objective is to bring the two fields of research together to further the understanding of anthropogenic derived particles in the environment. We welcome presentations comparing and contrasting information from the two fields including modeling, laboratory and field studies that can draw similarities or differences between these types of particles. We are proposing a platform and poster session titled Applying lessons from nanomaterial research to micro- and nanoplastics in the environment for the Society of Environmental Toxicology and Chemistry-North America meeting in Minneapolis, MN, USA in November 2017. The goal of the session will be to provide the audience with a current overview of the research associated with nanoparticles and micro- and nanoplastics in the aquatic environment.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Kay Ho [162148]

Robert Burgess [164424]

SUBMITTER: Kay T. Ho

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Nanotechnology Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Approaches for Deciphering Multiple Stressors in Aquatic Environments

DESCRIPTION: Increasingly, evaluation of aquatic ecosystems requires the understanding and examination of multiple stressors that affect those ecosystems. Approaches to address these multiple stressors, both in study design and in data analysis techniques, will be shared and discussed. Contributions from field, laboratory and data analysis approaches are encouraged. In particular, contributions are sought that aim towards a common goal of providing managers new tools and methods to decipher and weigh multiple stressors acting on in situ receptors.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Patrick Moran [163455]

SUBMITTER: Patrick W Moran

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: Sure, if desired- or if there are other reasons/ requests/ submittals (e.g. regional interest from Great Lakes.) Otherwise, no particular need for special consideration.

TITLE: Approaches for evaluating species sensitivity to chemicals

DESCRIPTION: This session will highlight the latest approaches and tools for looking at variation in species sensitivity to chemicals including species sensitivity distributions, phylogenetic methods, interspecies correlation estimates, and population models, including analysis of the benefits and shortcomings of the different approaches. The session will also examine variation in biological factors that underlie species responses to chemicals across levels of biological organization. The overall goal of this session is to stimulate further research and promote awareness of the importance of species variation in ecotoxicology and generate a discussion about approaches that can be used to evaluate the potential impacts of chemicals across the whole of biodiversity.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Scott Glaberman [300788]

SUBMITTER: Scott Glaberman

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Wildlife Toxicology Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Aquatic and terrestrial plants in ecotoxicology and risk assessment

DESCRIPTION: This session, organized by the SETAC Plant Advisory Group welcomes contributions that focus on new developments in plant ecotoxicology and the use of plants in the risk assessment of chemicals and other stressors. Abstracts may cover algae and periphyton, higher aquatic plants (macrophytes) and terrestrial plants. Special consideration will be given to submissions relating to the control of invasive species but the session will also include topics that: 1) biology and control of invasive species; 2) describe new and validated testing methods; 3) address reproductive endpoints in terrestrial plant studies; 4) present new studies or in silico modeling efforts on evaluating effects on plant communities at the field and landscape level; 5) describe ecological interactions between plants and other species in relation to stressor exposure, e.g., indirect effects; 6) develop techniques to incorporate plants more fully into the risk assessment process for pesticides, especially for endangered species and species at risk; 7) examine the use of Species Sensitivity Distributions (SSDs) and other higher-tier methods in risk assessment; 8) address other higher-tier plant studies such as microcosm, mesocosm and field studies and 9) the use of plants for phyto-remediation. Additionally, we would like to solicit abstracts on other local or regional plant ecology issues.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Henry Krueger [164565]

SUBMITTER: Henry O Krueger

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Plants Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Assessing Contaminant Effects in Ecosystems with Multiple Stressors

DESCRIPTION: Aquatic ecosystems throughout the world are subjected to multiple stressors where chemical mixtures and interactions with environmental factors are contributing to organism declines. Anthropogenic stressors such as chemical discharges from industry, agriculture, or treated urban wastewater can interact or be compounded by habitat degradation, invasive species, and other site specific stressors (e.g., water diversions/controls or temperature). This is especially true for estuarine ecosystems where tributaries and major river systems converge with a high degree of human activity and where interrelated factors vary spatially and over time. Understanding the role and relative contribution of each stressor to adverse effects generally requires a good conceptual understanding of the ecosystem, chemical fate and transport, potentially lots of data, a breadth of analytical techniques, and a multi-disciplinary approach that invokes an integrated systems perspective. However, limited data often poses a challenge to identifying clear stressor-response relationships and robust statistical hypothesis testing. This emphasizes the need for higher quality and more data, new data analysis methodologies, and integrated assessments of responses to multiple stressors. This session will focus on integrated assessments of multiple stressors and analyses of complex environmental data. Presentations will highlight lessons learned in the following areas (1) research advances in the diagnosis or prognosis of toxic effects in multi-stress environments, (2) integrated assessment of environments receiving multiple stressors, and (3) implications for ecosystem management (case studies for applications).

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

David Ostrach [178658]

Cameron Irvine [162780]

SUBMITTER: David J Ostrach

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: We typically have more than enough abstracts for full-day session and hope to again this year. If that ends up being the case it would be very helpful if we could order the full-day session in the manner we wish. In the past we would only get to arrange the morning session and the afternoon session separately. By doing it that way it does not allow us to get the continuity and correct order that we would really like in this important session. If it ends up being only half day session I would appreciate being scheduled in the afternoon due to my physical limitations.. Thank you so much for your consideration! If you require additional information or clarification please don't hesitate to contact me Sincerely, David J Ostrach PhD

TITLE: Assessing the Sustainability of Chemicals in Consumer Products

DESCRIPTION: Chemicals in consumer products have been the foci of regulatory bodies in recent years across the globe, such as the reform of Toxic Substance Control Act (TSCA) of the U.S., Safer Consumer Products Program in the State of California, REACH program in Europe, and other similar regulations in other countries including Japan, China, and South Korea. Despite the progresses in regulatory front, understanding the environmental and health impacts of chemicals in products remains to be a challenge. Everyday about 15,000 chemicals are newly registered to the Chemical Abstract Service (CAS), while the speed at which our knowledge on their life cycle impacts grows is much slower. Thus, tools that can rapidly quantify the environmental and health impacts of chemicals are urgently needed. In addition, we need quality data, efficient algorithms, and a smart way to integrate and communicate them. In this session, we welcome the latest developments in the effort to understand the environmental and human health impact of chemicals. These developments can be theoretical models, quality data, efficient algorithms, or smart way to integrate and communicate them Potential topics to be covered include, but not limited to, (1) life cycle inventory on chemicals, (2) fate and transport of chemicals, (3) exposure assessment for near-field and far-field, (4) predictive toxicity risk assessment, (5) uncertainty and transparency in data, (6) techniques for smart data integration, (7) case studies, and (8) communicating scientific results with various stakeholders?

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Dingsheng Li [311928]

SUBMITTER: Dingsheng Li

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Life Cycle Assessment Interest Group (North America)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Assessment and Management of PAHs in Urban Waterways

DESCRIPTION: Polycyclic aromatic hydrocarbons (PAHs) are ubiquitous organic compounds that can impair ecosystem health, especially in urban areas. These compounds have garnered renewed attention because of their ubiquity at elevated concentrations in surficial sediments of many urban waterways in the U.S., even while many other contaminants are decreasing in concentration. Novel approaches for best management practices for managing PAH-contaminated stormwater and addressing PAH-contaminated sediment from nonpoint sources are being developed. Advances in analytical techniques are broadening the array of PAHs that can be measured in environmental samples and source materials, presenting new information on high molecular weight PAHs, oxy- and heterocyclic-PAHs, and alkylated PAHs. In turn, these compounds can be used for more thorough environmental forensic analyses of PAHs from multiple sources, as well as aquatic toxicity evaluations. The use of "-omics" methods and/or UV-radiation to assess the effects of PAHs on aquatic organisms are important, as well. Management actions that reduce sources of PAHs to the environment are beneficial. Presentations in this session will evaluate these issues and others, including: freshwater and estuarine field assessments of PAHs in urban areas; transport, fate, and/or bioavailability of PAHs related to carbonaceous materials, plastic microparticles, and/or nanomaterials; biotic enrichment or degradation of PAHs in sediment; novel sediment and/or pore water assessment techniques for PAHs; ecological risk assessment approaches for aquatic organisms exposed to PAHs; effects of co-occurrence of PAHs with other sediment or soil contaminants; and effects of watershed land uses on the distribution of PAHs in urban waterways. Presentations that use a weight-of-evidence approach will be particularly useful.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Judy Crane [161757]

Barbara Mahler [171204]

SUBMITTER: Judy L. Crane

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Sediment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: The Environmental or Analytical Chemistry Session Track could be considered as an alternative session track.

TITLE: Best Practices in Laboratory Ecotoxicity Testing of Difficult-To-Test Substances

DESCRIPTION: This session proposal is directed toward the evaluation and testing of substances which are susceptible to a variety of loss processes (i.e. volatile, sparingly soluble, easily degradable) and may be difficult to measure/quantify in aquatic solutions. The objective of this session is to better understand the state of the science for evaluating chemical substances which are difficult-to-test in aquatic test systems. The output would be more reliable/consistent experimental design for benchmarking individual studies to one another and higher quality reporting/manuscripts.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Josh Butler [195156]

SUBMITTER: Josh Butler

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Biosafety and Biosecurity Risk Management for Georgia

DESCRIPTION: Biosafety and biosecurity risk management is among acute issues in Georgia. There is no clear policy for managing biomedical facilities (like certification, accreditation by biosafety levels) and, of course, there is lack of legislative instruments for combating possible biological threats that can arise from uncontrolled activities. Risk assessment and biosafety/biosecurity management in organizations and at national level is not fully carried out.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Mirtskhulava Merab [197183]

SUBMITTER: Mirtskhulava Merab

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Birds under stress: impacts of chemical exposure and environmental changes

DESCRIPTION: Birds are concurrently exposed to multiple environmental stressors, including exposure to a plethora of contaminants, unpredictable variations in food availability, and climate change. As such, birds respond to these multiple factors in an integrative way, thus allowing researchers to assess, identify and monitor concomitant effects of broad environmental changes. This includes the use of birds to monitor spatial and temporal trends of environmental contaminants including legacy compounds (e.g., PCBs, chlorinated pesticides, dioxins/furans, and PBDEs), trace elements, and current-use chemicals of potential health concern (e.g., emerging perfluorinated compounds and flame retardants). The wide variations in ecology, habitat use and foraging habits of avian species (e.g., terrestrial vs. aquatic, omnivore vs. piscivore, migrating vs. resident, raptorial vs. passerine) provide insights into the complexity of exposure pathways and differences in contaminant profiles and exposure-related effects. Birds have also been used extensively in field and laboratory settings to characterize the exposure, toxicokinetics and toxicodynamics of priority chemicals, and their potential toxicological effects (e.g., endocrine and immune functions, reproduction, development, etc.). The purpose of this session is to advance our knowledge of birds as indicators of ecosystem changes. Topics may include, but are not limited to, the use of wild and model avian species to characterize: (1)the exposure and spatiotemporal trends of contaminants; (2)their sources and pathways in ecosystems from temperate (urbanized) and remote regions; (3)the factors that affect their organismal fate (e.g., uptake, bioaccumulation, and biotransformation); (4)their exposure-related toxicological impacts from the molecular level to the population level; (5)their integration of broad-scale environmental variables (e.g., climate change, change in food web dynamics, habitat loss, etc.). In order to recruit 5-6 designated presenters for our session, we will send invitations to scientists conducting first-class research in the related topics. We will also encourage graduate students to present their work in our session.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Jonathan Verreault [174039]

Kim Fernie [163846]

SUBMITTER: Jonathan Verreault

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Wildlife Toxicology Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Challenges and opportunities in urban agriculture: Nutrient management and contaminant mitigation

DESCRIPTION: Urban agriculture is rapidly expanding in many cities worldwide, and provides a variety of economic, educational, and environmental benefits to communities. However, despite its growing popularity, little is known about controls on nutrient cycling and the occurrence and fate of heavy metals and organic contaminants under the unique conditions associated with agricultural production within metropolitan areas. For example, compost, frequently used a fertilizer in urban agriculture, has the potential to recycle nutrients from food waste back into the human food system. However, the ratio of nutrients in compost may not match the nutrient demands of crop production. Imbalanced or excessive application of compost could lead to losses of nutrients through leachate or runoff, contributing to the pollution of groundwater or surface water. In addition, heavy metal and organic contaminants may be present in urban environments from historical land uses or anthropogenic activity, which may pose risks to consumers and require mitigation or modification of management strategies. This session will synthesize our existing knowledge and highlight research needs for this emerging field. The Twin Cities have been at the forefront of urban ecology, and this session will bring together local and global experts. We will aim for diverse representation in this session including issues related to nutrient and water management, soil contamination and remediation, and mitigation of the potentially negative consequences of urban agriculture.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Gaston Small [313781]
Pamela Rice [166834]
Adam Kay [313875]

SUBMITTER: Gaston Small

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Challenges in the Environmental Risk Assessment of Pharmaceuticals

DESCRIPTION: Concerns about the potential effects of pharmaceuticals in the environment have prompted research and regulation to understand and manage the use of these substances. Guidance on approaches for risk assessment of human and veterinary medicines has been in use for a number of years in various jurisdictions. The approaches are harmonized to varying degrees, and allow for regional differences, which can complicate their use. In addition, studies and models that have been used to evaluate environmental effects and predict environmental exposure have been largely derived from approaches used for substances other than pharmaceuticals (e.g., pesticides and industrial chemicals). This session invites presentations that discuss some of the challenges that are emerging as we begin to move into more refined risk assessments for pharmaceuticals. Where do problems arise in application of standard test guidelines? Are there environmental fate properties unique to pharmaceuticals that we are not currently investigating? Are there test species or study types not currently considered? Which exposure pathways and scenarios are not well characterized and how can we improve predictions of exposure? What is the role of environmental monitoring? What are the emerging issues surrounding antimicrobial resistance? Presentations on regulatory perspectives, risk mitigation, and risk management, as well as case studies of risk assessments, are also invited.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Jane Staveley [169821]

Julie Chateauvert [311857]

SUBMITTER: Jane P. Staveley

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Pharmaceuticals Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Chemical, Biological and Instrumental methods for detecting harmful algae blooms and their natural toxins.

DESCRIPTION: Harmful algal blooms (HABs) in freshwater and marine systems are defined as an assemblage of eukaryotic or prokaryotic plankton which have the potential to cause negative health, ecological or economic impacts. These negative impacts are caused by mechanisms that include, but are not limited to, public health and environmental risks from toxin(s) production, light attenuation, diurnal swings in pH and dissolved oxygen, offensive tastes and odors, and impaired visual aesthetics. According to NOAA, Western Lake Erie has experienced 8 significant algal blooms since 2002. One of the most significant occurred in 2014 where half a million people in the city of Toledo were without drinking water for several days. On August 19, 2015, an algal bloom began in the Ohio River at Pike Island Locks and Dam (mile 84.2) and reached its peak around September 23, 2015 down to river mile 720.7. OH, WV, KY and IN issued recreation advisories for the Ohio River as the bloom extended into their areas. IL issued a precautionary statement concerning recreation in the river due to concern that the bloom would reach their border. The highest microcystin concentration was 1900 ug/L at river mile 468.8 (Cincinnati, OH). In November 2015, the CA DPH updated its warning to consumers regarding certain seafood caught along the CA coastline that may contain high levels of domoic acid in Dungeness and Rock crabs caught in waters between the Oregon border and the southern Santa Barbara County line. Research on natural toxins has many challenges compared to anthropogenic chemicals with regard to their toxicity, availability, accumulation, fate, and other chemical and physical factors as they relate to the biology and ecology of living organisms. Accordingly, there are many challenges to characterize exposure through the detection and quantification of individual toxins and their mixtures in the environment. Examples of some of the major toxins found in various combinations are: (a) prokaryotes (cyanobacteria) - microcystins, cylindrospermopsin, anatoxins, nodularin and saxitoxins; and (b) eukaryotes (algae, euglenophytes & dinoflagellates) - euglenophysins, prymensins, brevetoxins, ciguatoxins, saxitoxins and domoic acid. In order to help address the issues outlined above, the objective of this session is to exchange information on chemical, biological, instrument and sensing methods for the detection of HABs related organisms and their toxins in water, tissues and sediments. Such methods include analytical chemistry methods, remote sensing and biological methods such as: assay methods, molecular genetics (qPCR, RT-qPCR, transcriptome, chip assay and metagenome), electrochemical, spectroscopic or hyperspectral imaging and microscopic morphology methods and phone/PAD Apps, and instrumental methods such as algae and daphnia online sensors providing information about toxicity (e.g., fluorescence, behavior) or field handheld fluorimeters.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

James Lazorchak [160726]
Dionysios Dionysiou [309960]
Bryan Brooks [164117]
Stephanie Smith [303269]
Damia Barcelo [173962]
Dawn Perkins [163647]
Joel Allen [161700]

SUBMITTER: James M. Lazorchak

PRELIM SESSION TYPE: Platform and Poster
INCLUDE IN SPECIAL SYMPOSIUM: FALSE
SUBMISSION COMMENTS:

TITLE: Collaborative Research Among Academia, Business and Government

DESCRIPTION: A founding principle of SETAC is to maintain a tripartite balance among academia, business and government. In addition to running a society and attending meetings together, it is imperative that these groups are active collaborators in conducting environmental research. Despite the potential for conflicts of interest, there are numerous positives that result from collaborations including better understanding of research topics from all perspectives, access to resources that would otherwise be unavailable and better training of students for careers outside of academia. This session will highlight collaborative research projects among academia, business, and government with speakers from across all three disciplines presenting. A request will be sent to speakers to provide additional briefly provide their insight into the benefits of collaborative research and how to avoid any pitfalls.

TRACK: Linking Science and Social Issues

CHAIRS:

Jason Belden [162919]

Richard Brain [169905]

SUBMITTER: Jason B. Belden

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Communicating ETAC to Stakeholders: The Importance of Your Voice in Science

DESCRIPTION: Evidence-based science in our SETAC community provides a shared understanding of outcomes and impacts associated with environmental exposures and perturbations. While peer-reviewed publications in the appropriate journal, with high impact to its readership, are an essential component to the process, opening up the practice of science and learned outcomes to stakeholders provides a bridge to translate research outcomes into practice. Meaningful scientific output should be self-standing, open to constructive criticism, transparent and sufficiently clear to be meaningful to fellow scientists, persons- and communities-at-risk, policymakers and legislators. Professional and graduate-level training for research scientists does not commonly include structured communication and outreach strategies targeted for different audiences. Nevertheless, the role of effective science is to have impact; to have a voice. That impact may be for a person, a community or an environmental region - to provide a scientific translation for what is played out between the various "actors" on your research "stage," - such as interactions in molecular, chemical, cellular or immune systems under varying conditions, or key players whose interactions foster shifts in populations, management strategies, policy or funding before the final curtain call. Our SETAC community provides a shared, evidence-based understanding of outcomes and impacts associated with environmental exposures and perturbations. While peer-reviewed publications in the appropriate journal, with high impact to its readership, is an essential component to the scientific process, opening up the practice of science and learned outcomes to stakeholders provides a bridge to translate research outcomes into practice. Science output should be self-standing, transparent and sufficiently clear to be meaningful to fellow scientists, persons- and communities-at-risk, policymakers and legislators. Professional and graduate-level training for young scientists does not commonly include structured communication competencies that include outreach strategies to support scientific communications targeted for these different audiences. The impact of our science is lessened without a voice, without an advocate, to share results in context so as to provide perspective for persons who need it most. This session showcases environmental health case studies that exemplify academic, industry and government responses to stakeholder and community needs. Stakeholders represent individuals, communities or groups who "have a stake" in your research efforts. As an example, stakeholders associated with surface water contamination in community drinking wells might include homeowners, local community groups, water district managers, physician's networks handling exposure cases, and legislators involved in supporting clean water for that district. Other stakeholder engagements may present greater challenges or even conflict, where scientific data may appear to support only one side of a long-standing argument. Nevertheless, well-documented scientific inquiry provides needed evidence to support or refute many aspects of how our common global environment is managed and perceived. If scientists do not have voice in these communications, who will?

TRACK: Linking Science and Social Issues

CHAIRS:

Andrew Kane [163626]

SUBMITTER: Andrew S. Kane

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Community engagement in environmental science: Building links with traditional knowledge and Indigenous values

DESCRIPTION: Scientists within SETAC are tackling complex environmental questions around the fate and effects of contaminants, and their implication for environmental and human health. While there are attempts at involving and sharing this science with relevant communities, much of this research is still conducted, reported, and discussed within the bubble of our discipline-specific scientific communities. When research takes place on Indigenous lands, the social aspects of our science come to the forefront. Indigenous peoples rely on their traditional lands for subsistence food and to ensure social, cultural, and spiritual well-being. Conducting western science on traditional lands must therefore involve meaningful consultations and engagement with Indigenous communities. Despite considerable lip service, many outreach and engagement efforts are overlooked or undervalued within our scientific institutions and societies. This reflects history, the slow pace of institutional change, challenges inherent with linking Western science with traditional knowledge, and a paucity of opportunities to honestly discuss and share efforts and challenges with our scientific peers. This session aims to highlight ongoing collaborative research efforts with Indigenous communities, illustrate the strengths and challenges of successful collaborations that bridge research and community engagement, and discuss links between Western science and traditional knowledge systems. As demonstrated by the recent session at the Asia/Pacific meeting titled "Indigenous Knowledge and Values in SETAC and Environmental Science" and the current initiative within SETAC for the formation of an Indigenous Knowledge & Values Interest Group, this session is extremely topical to the SETAC Minneapolis meeting and deserves a stage within the SETAC community. Our hope is to recruit a representative group of speakers including academics, government agencies, consultants, students, NGO's, and Indigenous members that are involved in community-driven collaborative research projects. Topics that will be encouraged and solicited for this session include: community engagement and education efforts related to research on Indigenous lands, linking traditional knowledge and Western science, development of effective community-based monitoring programs, and initiatives to consult and include Indigenous communities in science and policy decisions, among others.

TRACK: Linking Science and Social Issues

CHAIRS:

Jonathan Challis [305870]
Heidi Swanson [311194]
Douglas Stevens [169853]
Diana Cryderman [313767]

SUBMITTER: Jonathan Karl Challis

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Note that this session has been supported by the newly proposed Indigenous Knowledge & Values Interest Group (not listed above). We have included a thoughtful list of possible speakers that would help provide these important perspectives and address the goals of this session: Doug Stevens, Diana Cryderman, Elsie Sunderland, Ryan Calder, Gordon Hickey, Benjamin Barst, Nil Basu, Lisa Loseto, Sonja Ostertag, Mark Hanson, Annemieke Farenhorst, Brian Laird, Laurie Chan, Frank Wania, Matt Binnington, Gwyneth MacMillan, Eric Liberda, Miguel Mora, Peter Campbell, Paul Jones, Erin Kelly, Jane

Kirk, Magali Houde, Ana Cabrezio?, Mark McMaster, Marlene Evans

TITLE: Complexity kills the minnow: Approaches to unravel the ecological consequences of pharmaceutical mixtures

DESCRIPTION: Assessing the impacts of complex pharmaceutical mixtures remains a challenging task in aquatic toxicology as interactions of compounds with similar or differing mechanisms of action may exert biological effects that cannot be determined using traditional assessment methods. This session will focus on laboratory and field approaches used to assess pharmaceutical mixture responses utilizing chemical, biological, genomic and other "omics" technologies. Pharmaceutical Modes of Action that have shown some impacts on aquatic life at environmentally relevant concentrations such as Ethynylestradiol (EE2), anti-hypertensives (Blood pressure medications) and neurotransmitter modulators (Antidepressants) are of greatest interest. Additionally, we will cover available tools used to simulate and predict real world continuous and episodic exposures to complex pharmaceutical mixtures at environmentally relevant concentrations. Specifically, tools that incorporate in vitro and in vivo techniques in combination with in silico models to predict fate and effects of pharmaceutical mixtures on exposed aquatic organisms will be discussed. We encourage submissions concerning theoretical approaches used to extrapolate from individual compounds to complex mixtures across different levels of biological organization.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Brandon Armstrong [190331]
Daniel Caldwell [179464]
Satomi Kohno [313821]
Daniel Villeneuve [167149]

SUBMITTER: Brandon Michael Armstrong

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Conflicts of interest and normative science: Is it a problem in environmental science?

DESCRIPTION: Normative science (also known as white hat bias) is defined as a type of information that is developed, presented, or interpreted based on an assumed (usually unstated) preference for a particular policy or class of policies. As ethical scientists, we are trained to let data and facts guide our conclusions, as well as help define future hypotheses. However, as humans we have morals and convictions that often make remaining unbiased challenging. There are many lines of scientific and economic thought that are driving political policies both in the United States and globally (e.g., climate change, energy extraction). More recently the increased prevalence and dissemination of 'fake news' as an ideology is running rampant and it is often justified by the purveyors as being morally and ethically acceptable because the end goal is moral. Furthermore, accusations about research results that are knowingly biased but support a "righteous end goal" are becoming more prevalent. Accusations of normative science have been made that researchers may be 'cherry picking' data to support a pre-conceived end goal that they and others (e.g. reviewers, editors) feel is morally and ethically righteous. Those that have differing views on a given topic are often impugned as having end goals that are morally and ethically aberrant. Interestingly, these two disparate viewpoints often have supporters that may be imparting their own brand of normative science from the perspective from which they view the issue. But does normative science exist in the environmental sciences? If so, how pervasive and extensive is it? Do biases or conflicts of interest influence the peer review process? We believe this discussion is important and timely, and propose a session to look at the extent of normative science in the environmental sciences. We are seeking submissions from all sectors (government, academia, NGOs, industry) where this subject can be presented, including examples of data that were purportedly used to demonstrate normative science as well as a discussion and evaluation of what constitutes normative science.

TRACK: Linking Science and Social Issues

CHAIRS:

Christine Lehman [187419]
Tim Canfield [164724]
Valery Forbes [175066]

SUBMITTER: Christine Lehman

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Crumb rubber in sports fields - Advances in environmental chemistry and exposure characterization
DESCRIPTION: Crumb rubber is being used in the United States and in many other countries as an infill material in artificial turf in sports fields, playgrounds and in decorative lawn grasses. As most of crumb rubber comes from recycled tires, its increasing presence in public and private spaces has raised concerns among environmental chemists, regulators and members of the public. In February 2016, the U.S. Environmental Protection Agency, the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry, and the Consumer Product Safety Commission launched a federal study to assess the main environmental and human health questions related to the uses of crumb rubber in sports fields and playgrounds. Also in Europe attention is growing on the issue, triggered by reports of uncontrolled emissions and exposure. Being still a relatively young field of research, this session aims to bring together scientists that have been working with crumb rubber and to present the latest findings on the environmental chemistry of crumb rubber, the environmental fate of the chemicals released from it, the characteristics and the fate of the particles generated from activity on the turf, and the exposure pathways associated with these particles and chemicals.
TRACK: Environmental or Analytical Chemistry
CHAIRS:
Dimitri Panagopoulos [304693]
Dorte Herzke [308568]
Randy Maddalena [161663]
SUBMITTER: Dimitri Panagopoulos
PRELIM SESSION TYPE: Platform and Poster
INCLUDE IN SPECIAL SYMPOSIUM: FALSE
SUBMISSION COMMENTS:

TITLE: Current and Future Challenges in Sediment Toxicity Testing for Environmental Risk Assessment

DESCRIPTION: Sediment toxicity testing in support of sediment risk assessment has recently gained an increasing awareness within the scientific community. For example, in 2015, a scientific opinion on environmental risk assessment for sediment organisms was published by the European Food Safety Authority (EFSA). Also, the European CHemicals Agency (ECHA) updated the sediment section of the "Guidance on Information Requirements & Chemical Safety Assessment" in February 2016. Sediment toxicity risk assessments are guided by the methods outlined in ASTM and by the USEPA sediment testing guidance documents (e.g., OCSPP 850.1735). In the US, standardized acute (10-d) and chronic (e.g., 28-d) sediment (including spiked sediment) methods are available with several invertebrate freshwater and marine species (e.g., freshwater species, Hyalella azteca, Chironomus dilutus; marine species, Leptocheirus plumulosus) while the available standardized and validated OECD spiked-water and spiked-sediment guidelines are available for two invertebrate species (e.g. Chironomus riparius, Lumbriculus variegatus), and one adopted guideline with the macrophyte, Myriophyllum. There are a number of differences between the OECD and USEPA guidelines for performing spiked sediment tests, including the introduction of the compound into the test system, the use of natural or artificial sediment, equilibration time, and flow-through or static test design. These test method differences lead to changes in the physicochemical properties of the sediment, bioavailability of the test compound, and the concentrations of the test substance in the overlying water, pore water, and bulk sediment. Due to these differences, the results of studies performed according to OECD and USEPA test methods are difficult to compare. In recent years, the environmental matrix (pore water, overlying water, sediment, bulk sediment, total loading) most strongly associated with effects has been widely debated. For example, most test organisms are epibenthic and live on the sediment surface and not within the sediment. Therefore, being aware of differences between OECD and USEPA test methods and between EFSA and ECHA guidances, lead to uncertainty in comparing studies, including the relevant route of exposure and how to express test results to be used in the sediment risk assessment. In this session, presentations that compare the differences between the guidelines and compare and contrast the different approaches for an environmental risk assessment using data from both sources and guidance are planned. As the bioavailability in the different test systems is not always directly comparable, and different uptake pathways exist for the different taxonomic groups and species, discussions of how the approaches as outlined in the EFSA scientific opinion can be accomplished are encouraged. Further, the goal of this session is to highlight applied and theoretical innovations associated with sediment toxicity testing, including but not limited to the topics above, to improve test performance, interpretation of study results, and reduce uncertainty in the application of sediment toxicity data for ecological risk assessment.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Henry Krueger [164565]
Paul Sibley [168923]
Matt McCoole [190263]

SUBMITTER: Teresa J Norberg-King

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Sediment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Harmonization of Methods Subcommittee of the Interest Group.

TITLE: Current Regulatory Landscape and Scientific Advances in Predicative Toxicology

DESCRIPTION: Historically, predictive toxicology has relied on modeling approaches such as structure activity relationships and utilization of historic databases in the quest for anticipating key regulatory challenges early in product discovery phase. Traditionally, animal-based testing strategies have been employed to meet global regulatory needs for toxicological endpoints. However, since the publication of the National Research Council's Toxicity in the 21st Century, a paradigm shift has occurred where scientists and regulators are moving toward reduced animal testing strategies utilizing in vitro systems as well as sophisticated modeling approaches. A critical need is the establishment of the association between in vitro responses to in vivo effects, and biomarker identification and development. The purpose of the session is to review the current state of science, present relevant key issues, highlight potential knowledge gaps for further development, and explore current and novel experimental techniques/designs. Key areas to be discussed include bioinformatics improvements and applications, biokinetics, mechanism of toxicity, modeling approaches, high-throughput cell based assay development and design, identification of adverse outcome pathways, structure activity relationships, omic technologies, and in vitro to in vivo extrapolation.

TRACK: Regulatory Directions

CHAIRS:

Kimberly Ralston-Hooper [180154]

SUBMITTER: Kimberly Ralston-Hooper

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Development and application of biologically-based mathematical models in adverse outcome pathways (AOP)

DESCRIPTION: There is growing interest in the development and use of mathematical models that link cellular/sub-cellular perturbations with biological responses occurring at higher levels of organization (tissue, organ system, whole organism). Biologically-based models (including physiologically-based and mechanistic-effect models) improve AOP usefulness by providing quantitative descriptions of specific dynamic processes that form the core of any AOP. Biologically-based models can provide estimates of toxicant disposition and target-organ exposure within the animal and/or specific toxic effects and adverse responses at higher biological scales and associated with apical endpoints (e.g. 17?-estradiol, vitellogenin and reproduction). Predictions or outputs from biological models can be used as input to various types of population models to complete the AOP process. Other advantages of biologically-based models include the organization of experimental facts and assumptions in a logical manner, explore the implications of change on model parameters through simulations and provide estimates of parameter values that are difficult or impracticable to determine experimentally. Collectively, these benefits of biological modeling aid the critical evaluation of hypotheses and assumptions associated with an AOP. This session will focus on development and/or applications of mathematical models with ecologically relevant species and encourage discussion on improving model accuracy and reducing uncertainties associated with model output.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Karen Watanabe [300107]

SUBMITTER: Irvin R. Schultz

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Mechanistic Effect Models for Ecological Risk Assessment of Chemicals (Europe)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: DEVELOPMENT OF BIOMARKERS FOR ENVIRONMENTAL MONITORING, ASSESSMENT AND POSSIBLE MONETARY VALUATION

DESCRIPTION: INTRODUCTION This session is devoted to progress in the use of monitoring data obtained from microorganisms or cell cultures or other non intrusive methods such as cybernetics in assessing pollution risks to man and the environment and quantification of impact in monetary terms. APPROACH Cybernetics and structured approach to biochemical processes in microbial cells offer the status of using various cell components as molecular markers in toxicity assay of environmental toxicants (Onwurah, 200). More attention has been paid to the effects of toxic substances on the reproductive cycle in which mutagenesis and teratogenesis were the main foci. However, several efforts have been directed to supplementing animal testing with short-term screening test, many of them being based on DNA damage in bacteria (strand-breaks) and/or lipid per¬oxidation and protein oxidation (Onwurah, 1999). A short-term toxicity assay based on carbon dioxide evolution by Escherichia coli has been described (Jardim et al, 1990). Also, the toxicities of Nigerian crude oil samples have been compared based on the inability of the marker organism Nitrobacter to effectively reduce nitrate to nitrite (Okpokwasili and Odokuma, 1994), while Biochemical Oxygen Demand (BOD) exertion phenomenon and glucose up¬take kinetics of Azotobacter in crude oil polluted medium were modelled to assess toxicity (Onwurah, 1998). The first potential site of toxic injury on a bacterial cell is the membrane lipid which regulates movement of solutes into and outside the cell. These membranes also anchor most of the enzymes involved in the metabolic pathways. Other potential sites of injury include proteins (enzymes) and DNA, the latter being responsible for cell division and genetics (Capone and Bauer, 1992). This im¬plies that a more reliable assessment of toxicity must involve some or all these parameters, more especially for mixtures of unknown composition such as crude oil. Cyber¬netics approach to modelling of microbial processes (Ramkrishna et al, 1992) is an approach that involves various cell components in quantitative monitoring and evaluation of environmental pollution. An empirical model can be derived from a basic picture of cybernetics and structured microbial processes based on the assumptions that dynamic phenomena such as DNA and protein syntheses may be altered by the interactions of a toxic substance in the growth environment. For example, interference in the biosynthesis of RNA of a bacterial cell resulted in an impulse transfer function which hinged on the sum of the elemental (substrate) distributions in the cell. For example, any event which will affect the monomers or pool from where RNA is synthesized will definitely affect RNA level and hence the final growth rate (Reuss, 1992).

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Ikechukwu Onwurah [170053]

Lawrence Ezemonye [176139]

SUBMITTER: Ikechukwu N.E. Onwurah

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Diversity in SETAC Chemistry

DESCRIPTION: Ten years ago we held a session at SETAC Milwaukee named "Diversity in POPs" that brought together the top women chemists in SETAC. We consciously avoided acknowledging that the session featured all women because of the chill that all the speakers had experienced in their careers due to our gender. We now propose a session on that 10 year anniversary that openly celebrates our accomplishments. This comes at a time of political and social uncertainty when such celebrations are ever more important. Our proposed session expands the celebration to include speakers who are younger and older, a diversity of colors, LBGTQ+, and originating from a wide range countries. All the speakers are accomplished women chemists in SETAC. The backbone of SETAC's future is our membership, all of whom needs to feel welcome and included. As such, featuring this diversity of women chemists in a dedicated session of open celebration of diversity speaks directly to the conference theme of working towards a sustainable, superior future. We have identified a strong and diverse roster of speakers with the common theme of environmental chemistry, starting with Deb Swackhamer who opened our session 10 years ago and was the 2nd woman out of 4 total, to receive the Founders award in 2009. We have invited several other speakers from 10 years ago (Cindy de Wit from Stockholm Univ, Staci Simonich Oregon State, Heather Stapleton Duke Univ), as well as expanding our celebration to include others.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Miriam Diamond [162404]
Amila De Silva [162100]
Katrina Varner [170669]

SUBMITTER: Amila O. De Silva

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Chemists in SETAC (North America IG)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: We have formally received endorsement from SETAC CIG. We have also received support for this session from the SETAC CAreer Development Committee including the SETAC Women's luncheon committee who are planning to endorse this session on their webpage and incorporate a concurrent theme. We have invited Deb Swackhamer and several other speakers from 10 years ago (Cindy de Wit from Stockholm Univ, Staci Simonich Oregon State, Heather Stapleton Duke Univ), as well as expanding our celebration to include Omowunmi Sadik (Prof, Univ New York at Birmingham), Susan Glassmeyer (US EPA), Perihan Kurt (Prof, Bursa Teknik Universitesi, Turkey), Carla Ng (Assist Prof, U Pitt), Susan Czizar (Proctor & Gamble), Prabha Ranasinghe (post-doc, Clemson), Leah Chibwe (post-doc, Environ Canada), Shira Joudan (PhD candidate Univ of Toronto), Alix Robel (PhD candidate, Oregon State), and Sandra Mejia-Avendano (PhD, McGill). We would like SETAC NA to consider this a spotlight session so that we can have it as a full day session. Many scientists have reached out and expressed interest in participating and we do not foresee any inability in filling out a full day or two!

TITLE: Do field relevant levels of pesticides affect native and manged bees?

DESCRIPTION: Lab studies demonstrate that insecticides and fungicides alter behavior, physiology, and colony health of native and managed bees. However, does data demonstrate that levels of pesticides in the field in either agriculture or restorations impact bee behavior, foraging, physiology, or colony health.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

vera krischik [311962]

SUBMITTER: vera krischik

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Ecosystem services as a basis for ecological risk assessment of chemicals - new approaches and research needs.

DESCRIPTION: Since a primary goal of ecological risk assessment is to inform environmental management decisions, our science must connect the benefits that people derive from ecosystems with the impacts of human activities on those systems. Although ecosystem services are increasingly being used to frame protection goals for assessing the risks of chemicals to ecological systems, there are wide gaps between the types of information collected for assessing risk and the ecosystem services to be protected. In order to effectively predict the impacts of chemicals and other human activities on ecosystem services, there is a need for quantitative approaches that link ecotoxicological exposure and effects data to ecosystem service delivery. This session brings together speakers developing methodologies and case studies that explore effects of toxic chemicals across levels of biological organization with the aim of linking exposure and effects data to ecosystem service delivery. The methods considered may include mechanistic, statistical or conceptual models as well as empirical approaches. Case studies may consider any ecosystem type, may include single or multiple stressors, and should highlight future research needs.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Valery Forbes [175066]
Randall Bruins [166648]
Katherine von Stackelberg [167162]

SUBMITTER: Valery Forbes

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecosystem Services Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: This session is also being sponsored by the Ecological Risk Assessment Interest Group.

TITLE: Ecosystem services, stakeholder values, and sustainability

DESCRIPTION: The contributions of ecosystems to the health and well-being of people (i.e. ecosystem services) are increasingly being used to frame management options, elicit stakeholder values, and support sustainable decision making. The ecosystem service paradigm is gaining recognition as a component and even an underlying principle of environmental policy, legislation, and management on an international scale. It can be used to define links between human activities and ecosystems and to link ecosystems and the services that in turn support and sustain those and other activities; this information can then be used to evaluate, justify, or optimize decisions. The ecosystem services concept allows decision makers to evaluate endpoints such as clean drinking water, recreation and tourism, and scenic and cultural values into environmental management and assessment practices. The Great Lakes and Mississippi River Basin are two of North America's treasures, with high ecological and economic value. In this session we highlight case studies and methods of ecosystem-service based management. Work from all regions is invited; because of the meeting's location in Minneapolis, work in the Great Lakes and Mississippi River regions are particularly welcome. The purposes of the proposed session are two-fold: 1) to provide the SETAC NA membership with an overview of how ecosystem services are engaging stakeholders and being used in decision making; and 2) to describe specific applications of the ecosystem services being used in the Great Lakes and Mississippi River Basin. The proposed session will consist of invited and contributed presentations on how ecosystem services are currently being used in the Great Lakes and Mississippi River Basin. Overviews and case studies of how ecosystem services are engaging stakeholders and are being used to inform decisions of various kinds are appropriate contributions to this session. This session is jointly sponsored by SETAC's Ecosystem Services, Ecological Risk Assessment, and Sustainability Interest Groups.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Kate Brauman [309310]
Anne Rea [191111]
Sabine Apitz [176169]

SUBMITTER: Kate Brauman

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecosystem Services Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: We hope to attract presenters who are not yet regular SETAC attendees. We understand that SETAC North America offers reduced one-day registration on Thursday and request that our session be scheduled then in order to broaden interest.

TITLE: Ecotoxicology and Environmental Health in the Developing World

DESCRIPTION: While our understanding of sources, fate, and effects of pollutants and pathogens within the industrialized world has increased dramatically over the past decades, investigations into pollutant ecotoxicology and the associated environmental health of the developing world have been less common. Environmental challenges that are particularly acute in less industrialized nations include lack of access to water treatment and sanitation technologies, air pollution, and mixed chemical/pathogen pollutant mixtures. These factors combine to create stressors that may cause significant risk to both ecological and human health. Because of the potential for local as well as trans-boundary pollutant transport, environmental contamination in the developing world may have global consequences. The mixtures of environmental pollutants in less industrialized nations may be quite distinct from those typical of the developed world, due to differences in use patterns, treatment technologies, and/or disposal routes. Research into fate and effects of pollutants in the developing world is made more challenging by social, economic, political, and logistical factors; however, much progress is currently being made to bring cutting-edge toxicology, exposure, and risk-assessment methodologies to bear on this problem worldwide. This session will highlight the current state-of-the art in research addressing ecotoxicology and environmental health of the developing world, with respect to pollutant and pathogen contamination. In particular, we will showcase work that takes an integrated approach to exploring pollutant occurrence, human and ecological exposure, toxicological effects, and interactions of chemical pollutants with microbial pathogens in air, water, and/or soil within the developing world. We invite contributions from teams of researchers working at the interface between chemistry, toxicology, and public health on a global scale.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Lee Ferguson [163838]

Tara Sabo-Attwood [185288]

SUBMITTER: Lee Ferguson

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Ecoxicoxicity of Per- and polyfluoroalkyl substances (PFASs)

DESCRIPTION: Per- and polyfluoroalkyl substances (PFASs), including perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) are commonly elevated pollutants in soil and groundwater near historic use of production sites. The presence of PFAS in biological tissues has been documented in areas as remote and far from sources as the artic. High detection frequency and concentration in soil and groundwater has resulted in identification of PFAS as compounds of interest and as emerging contaminants due to their regulatory uncertainty. Published toxicological research to date relates predominantly to PFOS and PFOA and for a limited number of organisms. The lack of robust and defensible ecotoxicity data for some taxa and for most PFASs other than PFOA and PFOS hinders risk assessment and may lead to unsupported risk management decisions. Given this gap in understanding of PFAS ecotoxicity, there is a need for further research into the PFASs including those on the Unregulated Contaminant Monitoring Rule 3 (UCMR3) list and beyond. This session is intended to serve as a forum for the development of ecotixicity data and Toxicity Reference Values (TRVs) specifically for PFASs. Participants will be encouraged to present updated research results on the ecotoxicity of PFASs beyond PFOS and PFOA, research on the ecotoxicity of all PFASs using previously untested organisms, and information that can refine existing exposure estimates or TRVs. Presentations on how ecological risk assessments are currently being conducted in light of the dearth of toxicity data would also be considered.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Christopher McCarthy [162513]

Christopher Salice [167747]

SUBMITTER: Christopher J. McCarthy

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecological Risk Assessment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: This session could be under aquatic toxicology and ecology as well. We already know of ongoing work and people who will submit if a session is approved. the work is a mix of aquatic toxicity studies to fish and benthic organisms as well as animal dosing studies to birds, frogs, lizards, and mice. So could be either. Same for interest groups. i put under ecological risk assessment, but also apply to wildlife toxicology.

TITLE: Emerging Environmental Chemistry: Trends, Transformations, and Fate of Organic Environmental Contaminants

DESCRIPTION: Discovery of an increasing number of emerging organic contaminants in the environment, such as brominated and organophosphate flame retardants, pesticides, pharmaceuticals, sunscreen/ultraviolet filters, artificial sweeteners, perfluorinated compounds, plasticizers, surfactants, antimicrobial agents and others is rapidly increasing due to the advances in analytical chemistry. Moreover, it is increasingly recognized that there is even larger number of unknown contaminants and their transformation products dispersed in the environment. However, little is known about the processes and transformation reactions that determine the fate of the emerging contaminants in the environment. This session is looking for original oral and poster contributions to discuss latest progress in research on the trends, transformation, and fate of emerging organic contaminants in the environment. Topics of interest include environmental occurrence, fate and behavior of the contaminants in the environment, including temporal and spatial trends, partitioning and degradation, source characterization, and transformation reactions.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Amina Salamova [189926]

Sascha Usenko [188258]

SUBMITTER: Amina Salamova

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Chemists in SETAC (North America IG)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Environmental Chemistry

DESCRIPTION: I propose a general session titled "Environmental Chemistry" from which one or more oral sessions might be created based on submissions of abstracts of research studies encompassing the broad areas of environmental chemistry (field or lab-based studies of contaminant occurrence, transport, fate and/or transformation; methods of contaminant analysis etc.) for those members/attendees not finding any of the other proposed sessions to be suitable categories for completion of their abstract submission. If an oral session is created from these submissions, I would be delighted to chair the session and would identify one or more co-chairs to assist me.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

William Foreman [164156]

SUBMITTER: William T. Foreman

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Environmental Data Mining: Doing Research with No Money

DESCRIPTION: Laboratories and governmental agencies are making environmental data free to access and available for analyses to investigate important fate and transport processes and pollutant sources. Moreover, these environmental data may be combined with demographic, historical use and activity, and meteorological data to supply context, verify laboratory results, and sometimes provide additional statistical power to help investigate these questions. An individual research laboratory is able to hone information related to the theory of how pollutants move through environmental media, but field measurements reflect what is actually happening. Environmental scientists adept at mining, processing and analyzing large amounts of data have power to tackle previously uninvestigated environmental problems on a larger and more generalizable scale. Presentations in this session will report on information learned from analyzing environmental data from all environmental media both spatially and temporally, and provide context by including metadata not traditionally included in classic environmental fate and transport work.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Kristie Ellickson [311944]

SUBMITTER: Kristie Ellickson

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Environmental Health

DESCRIPTION: An By focusing on restimated 12.6 million people died as a result of living or working in an unhealthy environment in 2012 - nearly 1 in 4 of total global deaths, according to the latest estimates from WHO. Environmental risk factors, such as air, water and soil pollution, chemical exposures, climate change, and ultraviolet radiation, contribute to more than 100 diseases and injuries. educing environmental and social risk factors, nearly a quarter of the global burden of disease can be prevented. Examples include promoting safe household water storage, better hygiene measures, safer management of toxic substances in the home and workplace. At the same time, actions by sectors such as energy, transport and agriculture are required urgently, in cooperation with the health sector, to address root environmental and social causes of ill-health that lie beyond the direct control of the health sector. A program that focuses on the application of environmental sciences, public health, the biomedical sciences, and environmental toxicology to the study of environmental factors affecting human health and related ecological issues, and prepares individuals to function as professional environmental health specialists. Includes instruction in epidemiology, biostatistics, toxicology, public policy analysis, public management, risk assessment, communications, environmental law and applications such as air quality, food protection, radiation protection, solid and hazardous waste management, water quality, noise abatement, housing quality, and environmental control of reacreational areas.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Mirtskhulava Merab [197183]

SUBMITTER: Mirtskhulava Merab

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecological Risk Assessment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: educing environmental and social risk factors, nearly a quarter of the global burden of disease can be prevented.

TITLE: Environmental Impacts of Consumer Products

DESCRIPTION: This session will focus on the environmental impacts of consumer products. Content of presentations is expected to include (although it is not limited to): fate and transport studies, toxicological studies, modeling, and life cycle assessment. The overall goal is to provide a platform for the community working in the area of the environmental impact of consumer products, and by defining it broadly, include a holistic view of the environmental impacts of these products. Abstracts from all areas covered under the SETAC umbrella that focus on consumer products are encouraged to apply to this session.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Andrea Hicks [192663]

SUBMITTER: Andrea Hicks

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Life-Cycle Assessment (North America IG)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Environmental omics measurements: Applications to human and ecological exposure and health
DESCRIPTION: Understanding the totality of anything is a difficult challenge, be it genes, proteins, metabolites, or a life-course of exposures. Developing robust instrumental and data analysis tools to measure the totality of anything is likewise problematic. While the omics fields and techniques vary in their maturity and impact, many of the techniques and tools are shared or similar, and much can be learned from each other. In this symposia, the focus will be on all types of omics measurements and interpretation of that data to better understand human and ecological exposures, biomonitoring, and ultimately health. Discussion of recent advances in molecular technologies, microarrays, separations, NMR, mass spectrometry, discovery or non-targeted approaches, modeling or computational tools, database development, bio- and cheminformatics positively impacting omics fields are anticipated. Instrument, measurement, and data analysis methods that have been applied across several specialties or applications are of particular interest, and both top-down and bottom-up approaches are topical. As "totality" can be overwhelming, techniques to identify, categorize, prioritize, and/or screen a range of gaps, chemicals, pathways, mechanisms, events, endpoints, and diseases are particularly important to these approaches and applications. The goals of this symposia are to have a broad range of environmental omics topics and to encourage cross-disciplinary engagement and learning.
TRACK: Environmental or Analytical Chemistry
CHAIRS:
Elin Ulrich [166592]
SUBMITTER: Elin M. Ulrich
PRELIM SESSION TYPE: Platform and Poster
ADVISORY GROUP: Chemists in SETAC (North America IG)
INCLUDE IN SPECIAL SYMPOSIUM: FALSE
SUBMISSION COMMENTS:

TITLE: Environmentally-relevant behavior assessment to support modeling, AOPs, and improved risk decision-making

DESCRIPTION: Behavioral endpoints in ecotoxicology are excellent integrators of the effects of stressors (both internally and externally) upon an individual organism at the specific time in which the data are collected and, for wildlife, there can be multiple stressors acting simultaneously which interact in unpredictable ways. Yet decision-making in ecotoxicology is based on risk at the population-level and subtle changes in behavior are challenging to extrapolate to population level effects Computational models are needed to connect individual-level behavioral endpointstopopulation-level risks. Laboratory-based experiments are often used to determine the influence of specific environmental stressors on individual behavior and can inform models of population-level effects. However, many laboratory-based behavioral assays are designed to assess neurobiological function without direct relevance to ecologically-important endpoints (e.g,, foraging efficiency, predator avoidance, and reproduction) This session will focus on the development and use of ecologically-relevant behavioral assays that mimic aspects of ecologically-important endpoints and to inform models of population-level effects. The increased use of ecologically-important behavioral assays will better link assessments on individuals to population-level outcomes, improve modeling efforts, and enhance the development Adverse Outcome Pathway (AOP) models that link molecular initiating events to population-level impactsTogether, these efforts will improve informed decision-making with regards to the effects of environmental stressors on wildlife populations.

TRACK: Regulatory Directions

CHAIRS:

Michael Carvan [164999]
Cheryl Murphy [163988]
Lori Ivan [312321]

SUBMITTER: Michael J. Carvan

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Epigenetic and evolutionary effects of pollutants: new challenges for long-term ERA

DESCRIPTION: Many organisms, populations and species are currently facing severe degradation of their environment due to global change. Human activities, among which the continuous release of potentially toxic substances into the environment, contribute significantly to this pervasive change. There is growing evidence that environmental change may affect organisms beyond exposed generations, as a result from non-genetic transmission mechanisms or from rapid evolutionary processes. These phenomena may give rise to either population adaptive patterns or aggravated and unexpected stressor effects leading to adverse population consequences. With regard to transgenerational effects, environmental stressors, including chemicals, biocides and plant protection products, may contribute to the de-regulation of epigenetic mechanisms. Yet, their disruptive potential in environmental toxicology is largely unknown due to a limited knowledge of epigenetic effects in ecotoxicological model organisms. Epigenetic effects represent a new challenge for risk assessment as their adverse outcomes may still be detected long after the actual exposure occurred. As for genetic processes, the probability of adaptive evolution depends on population standing genetic variation and evolutionary history, and on phylogenetic constraints. The difficulty to assess pollutant driven selection in the field is still increased by confounding factors that also shape the distribution of genetic diversity. However, evidence for evolutionary (genetic) and trans-generational (non genetically inherited) impact of pollutants is accumulating across a diversity of systems, and this reality cannot be ignored in future assessment procedures. This session welcomes studies devoted to measure, anticipate, and even predict epigenetic and evolutionary ecotoxicological effects, the genetic and non-genetic basis of adaptation/maladaptation to environmental stress and the adaptive potential of natural populations, as well as to understand their consequences for ecosystems, including species distribution and persistence. These studies should provide scientific guidance to support optimized decision making, through a sustainable trade-off between human demand on, and conservation of natural resources. This session is proposed by the EVOGENERATE workgroup (SETAC, ERA-AG).
Keywords: epigenetics, evolutionary ecotoxicology, genetic and long-term impact, adaptive response, comparative (eco)toxicology.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Karel A.C. De Schamphelaere [173854]
Joe Shaw [168632]
Kaley Major [190559]

SUBMITTER: Marie-Agnes Coutellec

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecological Risk Assessment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Existing and emerging contaminants in changing Arctic environments

DESCRIPTION: Changing climatic factors have been found to influence Arctic environments. Many scientists and local communities are presently trying to better understand changes occurring in these remote regions in order to predict more accurately the future of these pristine environments. Changes in water temperature, precipitation patterns, water mass distribution, ice-cover, food web composition and structure, and economic development are examples of factors that can impact the bioaccumulation and biomagnification of contaminants. This session aims to provide a tribune to disseminate results from research on the transport, the fate and the impacts of legacy? and emerging contaminants in Arctic aquatic ecosystems currently experiencing climate-induced changes. Research subjects of interest for this session are spatial and temporal trends of contaminants in biotic or abiotic samples, accumulation through food webs, and assessment of the biological impacts of chemicals in Arctic wildlife and northern populations. Highlighting the importance of indigenous traditional knowledge and collaboration of local communities alongside scientific research also fall within the objectives of this session.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Amila De Silva [162100]
Jane Kirk [189978]
Magali Houde [199514]

SUBMITTER: Amila O. De Silva

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Chemists in SETAC (North America IG)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Expanding beyond the honey bee: novel approaches for advancing risk assessment for nonÂ¬-Apis bees

DESCRIPTION: Pollinators have been in the spotlight of ecotoxicology risk assessment since the mid-2000s with concerns for globally declining honey bee (Apis mellifera L.) populations. The current risk assessment for bees has utilized the honey bee as the model organism for addressing protection goals for other bees. Robust methodology has been developed over the past decade to characterize the risk of agrochemicals to honey bees, individually and at the colony level. However, concerns remain for adequate environmental risk assessment for other bee species as they differ from honey bees in social structure, development, nesting, and food consumption. The goal of this symposium is to discuss how honey bee toxicity studies and the current regulatory framework can be adapted to establish a comprehensive bee risk assessment. We will discuss how our current knowledge on honey bee risk assessment can be used to extrapolate risk to non-Apis bees through considerations of species' differences in biology and ecology and how advancements in method development can be integrated into a regulatory framework. In doing so, we hope to provide a conducive environment to identify novel strategies for protecting non-Apis bee populations. Potential speakers and topics to solicit: Government representation - • Carlie Lalone (US EPA) - Adverse Outcome Pathways and species extrapolation using SeqAPASS • Theresa Pitts-Singer (USDA, ARS) - Recent advancements in exposure routes and special considerations for non-Apis risk assessment • David Lehmann (US EPA) - Recent advancements in bumble bee method development Industry representation - • Helen Thompson (Syngenta) - Extrapolation of Acute Toxicity Across Bee Species • Daniel Schmehl (Bayer) - Using honey bee toxicity screening methods to infer environmental protection goals for global bee populations Academia representation - • Angela Gradish (University of Guelph, Canada)- Utility of microcolonies • Andrew Frewin (University of Guelph, Canada)- standardized semi-field testing and lab testing with alfalfa leaf cutting bees • Jordi Bosch (Center for Ecological Research and Forestry Applications, Autonomous University of Barcelona) - Protection of solitary bee species in intensive agricultural landscapes

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Daniel Schmehl [313827]
David Lehmann [313026]
Cynthia Scott-Dupree [194307]
Annie Krueger [307135]

SUBMITTER: Daniel Robert Schmehl

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Exposure and Effects of Current-Use Pesticides and Industrial Organic Contaminants on Birds

DESCRIPTION: Birds are well-known sentinels of environmental contamination and have often been used to identify and monitor contaminants of concern. Although there is considerable information about legacy compounds (e.g., organochlorine pesticides, PCBs, PBDEs), there is a need for understanding how exposure to current-use pesticides and industrial organic contaminants affect birds. As they migrate through or reside in different habitats, birds are exposed to a wide variety of organic contaminants from urban, agricultural, and industrial sources. Routes of exposure include ingesting pesticide-treated seeds or eating contaminated insects, fish or smaller mammals. The focus of this session is on field and laboratory studies that link avian exposure to current-use pesticides and industrial organic contaminants to identify potential toxicological effects. Contaminants of particular interest include neonicotinoid and pyrethroid insecticides, fungicides, rodenticides, perfluorinated compounds, polyaromatic hydrocarbons, and novel flame retardants. Effects of interest range from the molecular level to the population level (e.g., endocrine and immune functions, reproduction, behavior, etc.). This session will explore whether exposure to currently-used organic chemicals of concern are exerting measurable impacts on birds at multiple spatial and temporal scales.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Christy Morrissey [186964]

Kathryn Kuivila [164803]

SUBMITTER: Kathryn M. Kuivila

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Wildlife Toxicology Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Exposure and effects of emerging contaminants on aquatic ecosystems

DESCRIPTION: Description: Chemicals of commerce are evaluated for environmental risk under national and international programs. Categorization of these substances for risk is typically based on persistence, long range transport potential, toxicity, and bioaccumulation. Programs such as Canada's Chemicals Management Plan (CMP), the USEPA's High Production Volume (HPV) Chemicals Challenge, and international programs such as the European Union's Registration Evaluation Authorisation and Restriction of Chemicals (REACH) program, all share a common goal of assessing chemicals of commerce in the environment. Many of these substances lack environmental measurements, toxicity data, and information on environmental fate. In this session, research findings on previously data-poor substances that are a current priority for risk categorization will be highlighted. This session focuses on aquatic ecosystems, particularly in pairing environmental concentrations with evaluating toxicity, bioaccumulation, and transformation. Studies on sources and disposition, including physical properties, dominant transport media, and local versus diffuse sources, will also be emphasized.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Magali Houde [199514]

SUBMITTER: Magali Houde

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate and Effects of Chemicals from Diffuse Sources and Stormwater

DESCRIPTION: Researchers and regulators are focusing increasingly on the environmental impact of diffuse sources (i.e., those not from a regulated point source) of chemical loadings to aquatic ecosystems. Diffuse sources are those which contribute to elevated levels of potential toxicants in the environment as a result of the use of common construction materials, products, and chemicals in everyday applications. Entry into the environment is most commonly tied with precipitation events and the associated stormwater runoff. Examples of diffuse sources include chemicals released from exterior architectural applications (roofs, gutters, flashing, etc), biocide/pesticide and agricultural applications, road surfaces and atmospheric deposition. The issue of chemicals in stormwater runoff is particularly a concern in urban environments with municipal and industrial runoff regulated by NPDES permits. Understanding the impact of diffuse sources requires a thorough understanding of 1) sources and release rates/amounts, 2) transport mechanisms and potential attenuation factors, 3) effects and bioavailability of the chemicals in receiving waters, and 4) the relevance of existing regulatory approaches for aquatic life protection developed primarily for use with point source discharges. The purpose of this session is to explore each of these components to increase awareness of the issue, present examples from the latest research, increase understanding of potential ecological impacts and help identify where resources and efforts should be focused to assess how impacts can be mitigated.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Kevin Rader [180880]

SUBMITTER: Kevin J Rader

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate and Effects of Metals in Organisms: Biogeochemical and Subcellular Perspective

DESCRIPTION: The concentrations and chemical speciation of metals in field organisms are critically important to characterize metal fate and effects in the environment, especially in industrialized and urbanization area. The metals in organisms from field and in-situ exposure are related to all aspects of metals in the environment including their release/source, bioavailability, transport and ultimate fate. Therefore, we constantly seek to increase our understanding of metal partitioning in subcellular perspectives and the corresponding toxic effects in a quantitative manner. The purpose of this session is to highlight current research directed at these areas. Topics that will be addressed in the session include: (i) new techniques for determining metal concentrations in various organelle of organism from field or in-situ exposure, (ii) toxic effects in aspects of subcelluar compartments such as mitochondria, lysosome et al., (iii) mechanisms for metal accumulation and excretion including impacts from biota, (iv) fates and effects of metals in organisms were associating with the geochemical behavior in sediments and overlying waters, and (v) application and validation using data from field sites. Key questions of this session will attempt to answer include: What is being (or can be) done to increase our ability to predict metal speciation quantitatively in subcellular compartments? Are more mechanistic explanations from subcellular perspectives aimed to adequately describe fate and effects of metals in the organisms from field or in-situ exposure?

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Zaosheng Wang [191358]

SUBMITTER: Zaosheng Wang

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: Welcome to talk with the scientist in Setac conference

TITLE: Fate and Effects of Metals: Biogeochemical Perspective

DESCRIPTION: The chemical speciation of metals is critically important to metal fate and effects in the environment. It impacts all aspects of the life cycle of metals in the environment including their release/source, bioavailability, transport and ultimate fate. We must therefore constantly seek to increase our understanding of metal speciation in the environment and our ability to describe metal speciation, transport and fate in a quantitative manner. The purpose of this session is to highlight current research directed at these areas. Topics that will be addressed in the session include: (i) new techniques for measuring metal speciation in aquatic systems, (ii) modeling tools for describing the geochemical behavior in sediments and overlying waters, (iii) mechanisms for metal transformation and immobilization including impacts from biota, (iv) metal interactions with relevant binding phases such as natural organic matter and mineral surfaces, and (v) application and validation of models using data from field sites. Key questions this session will attempt to answer include: What is being (or can be) done to increase our ability to predict metal speciation quantitatively? Are more mechanistic chemical descriptions required to adequately describe fate and effects of metals in the environment? What role do plants, microorganisms and other living things play in the overall life cycle of metals?

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Kevin Rader [180880]

Richard Carbonaro [164960]

SUBMITTER: Kevin J Rader

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Metals Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate and Effects of Metals: Marine Issues

DESCRIPTION: Advances in the understanding of interactions between accumulation, organism physiology and exposure geochemistry have been instrumental in the development of impact prediction models. Improving and refining current models requires data from a wide range of organisms, metals and water chemistries. The extension of this understanding to different endpoints, molecular mechanisms of toxicity, routes of exposure (e.g. dietary), and mixtures of metals also requires more information. This session will host the latest research on these and similar issues and will be of interest to all those interested in the acute and chronic toxicity of metals to aquatic organisms.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Bill Stubblefield [165369]

SUBMITTER: Bill A. Stubblefield

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Metals Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate and Effects of Metals: Mechanisms of Toxicity

DESCRIPTION: Fate and Effects of Metals: Mechanisms of Toxicity Advances in the understanding of interactions between accumulation, organism physiology and exposure geochemistry have been instrumental in the development of impact prediction models. Improving and refining current models requires data from a wide range of organisms, metals and water chemistries. The extension of this understanding to different endpoints, molecular mechanisms of toxicity, routes of exposure (e.g. dietary), and mixtures of metals also requires more information. This session will host the latest research on these and similar issues and will be of interest to all those interested in the acute and chronic toxicity of metals to aquatic organisms.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Bill Stubblefield [165369]

SUBMITTER: Bill A. Stubblefield

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Metals Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate and Effects of Metals: Regulatory and Risk Assessment Perspective

DESCRIPTION: A number of new approaches have been recently been developed to reduce the uncertainty associated with metal toxicity estimates in soils, sediments and aquatic environments (e.g. biotic ligand approaches and SEM-AVS/Foc). The application of these significant advances in science and modeling for metals in aquatic and terrestrial environments can contribute to pollution prevention, discharge objectives, remediation goals and criteria development in regulatory programs. This session will review the significant advances in the science related to metals in the context of risk assessment and regulatory initiatives. There is a strong need to discuss, through examples, case studies and regulatory policy how the new science can, will be, or is being used.

TRACK: Regulatory Directions

CHAIRS:

Bill Stubblefield [165369]

SUBMITTER: Bill A. Stubblefield

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Metals Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate of chlorinated persistent organic contaminants in the urban water cycle

DESCRIPTION: Chlorinated persistent organic contaminants incl. but not limited to polychlorinated biphenyls (PCBs), perchloroethylene (PCE), trichloroethylene (TCE) and chlorinated pesticides are getting increased attention in the urban water cycle despite their ban for industrial purposes several decades ago. Recent reports have also shown the new or unidentified sources are still present thus causing an increased interest in source tracking as well as development of environmentally sustainable remediation tools to eliminate these toxic compounds in the environment by using biological treatment methods. The objective of this session proposal is to discuss the potential sources and present the state-of-the-art of biological remediation methods for chlorinated persistent organic pollutants in the urban water cycle including stormwater, sewers, wastewater, rivers and coastal areas.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Birthe Kjellerup [308343]

SUBMITTER: Birthe Kjellerup

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Bioaccumulation Science Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate of Glucocorticoid Receptor Agonists During Water and Wastewater Treatment Processes

DESCRIPTION: In recent years, endocrine disruption of corticosteroid signaling pathways in wildlife and humans by environmental chemicals have attracted increasing attention. The integrated potential of chemicals in the aquatic environment that disrupt corticosteroid actions have been evaluated using in vitro glucocorticoid receptor (GR) mediated bioassays. Exogenous natural and synthetic corticosteroids (CSs), which are widely used in human and animal therapeutic applications, were demonstrated to be the most important GR agonists, that can potentially cause adverse effects, especially on aquatic organisms. To date, only a few studies have investigated the occurrence and behavior of GR agonists in the aquatic environment and their removal in conventional wastewater treatment plants. Furthermore, there are hardly any data reported on the removal of GR agonists by advanced water and wastewater treatment, especially those synthetic CSs with high potency. To further understand the fate of GR agonists in water and wastewater treatment processes, a sensitive and robust LC-MS/MS method was successfully developed for analyzing a wide range of GR agonists in various environmental waters. The occurrence of GR agonists in surface water and groundwater was monitored along the Lower Santa Cruz River (SCR). Several GR agonists were detected, and a trend of degradation was observed downstream the two WWTP outfalls for both surface water and groundwater. The fate of GR agonists in a local wastewater treatment plant (WWTP) was investigated, and up to 14 GR agonists were detected at different stages. Highly potent synthetic CSs, including clobetasol propionate (CBP), fluticasone propionate (FTP), fluocinolone acetonide (FCA), and triamcinolone acetonide (TCA), were poorly removed in WWTP. Negative removal of some CSs was observed in primary treatment, which may due to the deconjugation of CS conjugates. Removal of GR agonists in secondary effluent during various advanced water treatment processes, including UV, ozonation, MF, RO and chlorination, were studied. UV and RO appeared to be the most efficient treatment process for the attenuation of GR agonists, followed by ozone, while chlorination had little effects on GR agonists in water. Bench-scale experiments were then carried out to investigate the removal of GR agonists by ultraviolet based advanced oxidation processes (UV/AOPs), and powder activated carbon (PAC). UV/chlorine and UV/H2O2 were demonstrated to be effective in removal GR agonists in wastewater, and UV photolysis would be the predominant mechanism in UV/AOP processes. Four types of PACs were tested for removing GR agonists in wastewater effluent, and Cabot HDB carbon was suggested, while Calgon PWA carbon was not recommended due to its low removal efficiency.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Shimin Wu [313886]

SUBMITTER: Shimin Wu

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Fate, Toxicology, or Risk Assessment of Materials of Interest to the Military

DESCRIPTION: The Military Sessions provide a forum for scientists to report and discuss most recent research results to government/regulatory, university, industry, contractor representatives, and stakeholders, on material-classes of interest to the military and concerned parties. The Military Sessions, platform and poster, meet a critical need within SETAC for this type of Government-sponsored research presentations. The Military Sessions focus on the fate, toxicity, or risk assessment of "Materials of Interest to the Military" as potential contaminants in the environment, plus innovative methods developed to investigate material properties, fate, or effects. The common thread for the sessions remains the reporting of research that establishes new environmental fate data, or toxicological benchmarks, for "Materials of Interest to the Military" that present concerns for human health or as contaminants in the environment. DoD strategy for protecting human health and the environment applies a systematic approach to managing natural resources at installations. It builds on advancements in environmental chemistry and toxicology to enhance sustainability of natural resources and improve management practices, while supporting requirements for maintaining and sustaining military testing, training, and Mission capabilities. Proactive protection of human health and ecosystems at DoD installations is in-part achieved by utilizing best-available information regarding environmental fate and toxicological effects of "Materials of Interest to the Military," including data and results for military-unique materials, emerging threats, and common industrial chemicals.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Ron Checkai [160882]
Doris Anders [162295]
Mark Johnson [163329]
David Johnson [180764]
Geoffrey Sunahara [165392]

SUBMITTER: Ron Checkai

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Soils Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Flame Retardants: Sources, Environmental Behaviour, Wildlife and Human Exposure, and Effects Implications

DESCRIPTION: Flame retardant (FR) chemicals are used to protect the public from fires by reducing the flammability of combustible materials, and comprise a large and diverse class of additive and reactive substances. Additive FRs in particular can enter the environment through spills, leaching and volatilization during production; volatilization and leaching coincident with use; losses from use and disposal in particulate form; and leaching during recycling processes. In the environment, wildlife may be exposed to FRs via multiple pathways. Exposure modes include ingestion, inhalation and dermal contact. Humans may also be exposed via food intake, dust/air inhalation and dermal contact. Particular subpopulations such as children and pregnant women may be more vulnerable to contamination in comparison with general population. The discontinuation of commercial PBDE mixtures, including the recent phasing out of BDE-209, has stimulated the production and usage of a number of alternative FRs to meet product flammability standards. Recent studies have increasingly reported the environmental occurrence of many alternative FRs, such as 2-ethylhexyltetrabromobenzoate (EH-TBB), bis(2-ethylhexyl)-3,4,5,6-tetrabromobenzoate (BEH-TEBP), 1,2-bis(2,4,6-tribromophenoxy)ethane (BTBPE), decabromodiphenylethane (DBDPE), dechlorane plus (DP) and related compounds, as well as organophosphate ester flame retardants (OPE FRs). However, knowledge still remains limited in the sources, environmental behaviour, spatiotemporal distribution of alternative FRs, as well as their exposure in wildlife and humans and potential effects that can lead to toxic or ecotoxic impacts. Exploration of these themes will advance our knowledge of environmental contamination of FRs and consequences. Topics for this flame retardant session include but are not limited to: (1)Analytical method advancement for detecting and characterizing alternative FRs; (2)Sources of various legacy or alternative FRs and pathways of entry into the environment; (3)Environmental behaviour such as environmental degradation, air-water partitioning and dust absorption; (4)Bioaccumulation, biomagnification and biotransformation; (5)Exposure to sentinel wildlife species; (6)Human exposure pathways and consequences; (7)(Eco)toxicological and effects assessments.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Robert Letcher [161026]

Da Chen [180165]

SUBMITTER: Da Chen

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Food Web Models: Lowering Uncertainties in Predictions at Contaminated Sediment Sites

DESCRIPTION: Across numerous sites with contaminated sediments, risks and remedial decisions are based upon chemical residues in fish and shellfish. When residues in fish drive the cleanups, food web models (FWMs) are used to forecast their chemical residues in times spanning from 5 to 50 years post remedy completion. Often there is a fair amount of skepticism about the about the accuracy and usefulness of such predictions, and resultantly, any improvements in FWM forecasts could have substantial effects on remedial designs and costs at future sites. Passive sampling measurements, stable isotope measurements across the food web, organism life histories, and remedies involving sediment amendments (a newly developing remedial action) feed into or require the use of FWMs in risks and remedial decisions. The objective of this session is to highlight recent research and in-sights on FWM forecasts for contaminated sediment sites. Subjects of interest include gaps and limitations with current FWMs; how to incorporate passive sampling measurements, stable isotope measurements, organism life histories, and changes in chemical bioavailability associated with sediment amendments into FWM forecasts; research needs for improving FWMs; and cases studies illustrating the use of these newer techniques with FWMs.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Lawrence Burkhard [164653]

John Toll [166269]

SUBMITTER: Lawrence P. Burkhard

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Bioaccumulation Science Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Great Lakes Restoration Initiative: Occurrence and Effects of Contaminants of Emerging Concern
DESCRIPTION: This session will emphasize presentations that focus on the challenges that contaminants of emerging concern present to aquatic ecosystems in and around the North American Great Lakes. As such, this session will highlight a topic of broad interest to the SETAC membership (contaminants of emerging concern-CECs) and connect it to the Upper Midwest location of the 2017 North American SETAC meeting (Minneapolis). The session would fit the theme of the meeting by integrating information about sources of CECs (chemical use) and assessment of biological impacts (ecosystem health). The session organizers have already recruited at least ten speakers representing eight institutions (including speakers from four federal agencies and several universities) should this session be approved. Studies employing a range of analytical, biological effects-based, and in silico tools for both surveillance and hypothesis-directed site characterization will be presented, with attention to the following research topics and questions: Presence of Contaminants of Emerging Concern in the Great Lakes Watershed: •Which CECs are present at concentrations of biological relevance and in which watersheds? •To what degree do watershed attributes and potential sources govern the occurrence of CECs in Great Lakes tributaries? •Are complex environmental mixtures of CECs predictable with regard to the co-occurrence of specific compounds? Effects of CECs on exposed organisms in the Great Lakes: •What biological pathways are mixtures of CECs detected in the Great Lakes watershed perturbing or likely to perturb? •What endpoints at the molecular, cellular, tissue, organ, individual and, population level should we be focusing on and what taxa are likely to be sensitive? •What contributions can the 'omics tools make for assessing impacts on Great Lakes biota? •What can single compound laboratory exposures tell us about environmental exposures to complex mixtures and vice versa? •What evidence is available that links the presence of CECs to effects on extant individuals or populations of Great Lakes organisms? Tools to assess the environmental impact of CECs in the Great Lakes: •What types of statistical methods can be applied to elucidate associations between chemical exposure and biological effects observed? •How do we integrate effects that cross levels of biological complexity to arrive at hazard estimates that are useful for decision-making?
TRACK: Aquatic Toxicology and Ecology
CHAIRS:
Heiko Schoenfuss [168312]
Steven Corsi [161503]
Drew Ekman [306367]
Daniel Villeneuve [167149]
SUBMITTER: Heiko I. Schoenfuss
PRELIM SESSION TYPE: Platform and Poster
ADVISORY GROUP: Endocrine Disrupter Testing and Risk Assessment Interest Group (Global)
INCLUDE IN SPECIAL SYMPOSIUM: TRUE
SUBMISSION COMMENTS:

TITLE: High-technology metals as emerging contaminants of potential concern: environmental fate, transport and toxicity

DESCRIPTION: Growth in new electronics and renewable energy technologies has intensified extraction and global use of a number of metals with specialized properties, including the rare earth elements, platinum group metals, In, Nb, Ga, Th, Te, and others. These metals are indispensable for modern consumer products such as smart phones and energy efficient lighting phosphors, as well as for electric and hybrid vehicles and advanced wind turbines. The increased environmental fluxes for these metals however lead to increased potential for ecosystem impacts, as human activities generate higher concentrations of these metals, through mining and industrial processing and manufacturing. Unintended direct releases of these metals to the environment from industrial or mining operations as well as releases following disposal of consumer products (e.g., landfill leachates) are almost certain to increase. However, their biogeochemical behavior is not well understood. We invite presentations describing studies of the fate and transport of these metals in surface and near surface ecosystems, and interactions with and impacts on biota. These may include investigations of chemical speciation in aquatic systems, molecular level reaction mechanisms, reactive transport, analytical challenges, natural and anthropogenic contributions to their environmental concentrations and fluxes, and impacts on biota. Field, laboratory and computational studies are welcome.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Jim McGeer [162556]
Yoshiko Fujita [313892]
Scott Smith [172546]

SUBMITTER: Jim McGeer

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Metals Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: This session is intended to be under the umbrella of the Fate and Effect of Metals sessions Could be Environmental Geochemistry instead of Aquatic Toxicology.

TITLE: How to Advance Science for Sustainable Development

DESCRIPTION: How to Advance Science for Sustainable Development 1. Recognise science as a universal public good. 2. Acknowledge basic science as a principal requirement for innovation. 3. Enhance diversity in science for sustainable development. 4. Strengthen science education. 5. Raise investments in science. 6. Promote an integrated scientific approach 7. improve long-term scientific assessment and build up scientific capacity and capability. The following activities should be undertaken: (a) Support development of an expanded monitoring network to describe cycles (for example, global, biogeochemical and hydrological cycles) and test hypotheses regarding their behavior, and improve research into the interactions among the various global cycles and their consequences at national, sub regional, regional and global levels as guides to tolerance and vulnerability; (b) Support national, sub regional, regional and international observation and research programmes in global atmospheric chemistry and the sources and sinks of greenhouse gases, and ensure that the results are presented in a publicly accessible and understandable form; (c) Support national, sub regional, regional and international research programmes on marine and terrestrial systems, strengthen global terrestrial databases of their components, expand corresponding systems for monitoring their changing states and enhance predictive modelling of the Earth system and its subsystems, including modelling of the functioning of these systems assuming different intensities of human impact. (d) Encourage coordination of satellite missions, the networks, systems and procedures for processing and disseminating their data; and develop the interface with the research users of Earth observation data and with the United Nations EARTHWATCH system; (e) Develop the capacity for predicting the responses of terrestrial, freshwater, coastal and marine ecosystems and biodiversity to short- and long-term perturbations of the environment, and develop further restoration ecology; (f) Study the role of biodiversity and the loss of species in the functioning of ecosystems and the global life-support system; (g) Initiate a global observing system of parameters needed for the rational management of coastal and mountain zones and significantly expand freshwater quantity/quality monitoring systems, particularly in developing countries; (h) In order to understand the Earth as a system, develop Earth observation systems from space which will provide integrated, continuous and long-term measurements of the interactions of the atmosphere, hydrosphere and lithosphere, and develop a distribution system for data which will facilitate the utilization of data obtained through observation; (i) Develop and apply systems and technology that automatically collect, record and transmit data and information to data and analysis centres, in order to monitor marine, terrestrial and atmospheric processes and provide advance warning of natural disasters.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

THOMPSON EDIAGBONYA [313783]

SUBMITTER: THOMPSON FARADAY EDIAGBONYA

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Chemists in SETAC (North America IG)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: How to prioritize stressors that impact aquatic life at large spatial scales?

DESCRIPTION: There have been many recent efforts that have suggested that various chemical stressors that occur in aquatic systems are of major concern. However, many have not taken into account important habitat quality criteria of water bodies and how these factors may influence aquatic communities. Many have suggested that chemical stressors of global concern are inorganics (e.g., mercury, metals, metalloids), legacy persistent organic pollutants (POPs) (PAHs, PCBs, dioxins/furans), fluorinated chemicals (PFOA, PFOS), flame retardants (PBDEs), pesticides, endocrine disrupting compounds (EDCs), pharmaceuticals, antibiotics, salts, nutrients, and algal blooms and their toxins. However, the relative impact of chemical versus habitat quality condition has not yet been elucidated. Here we ask the following questions: What is the evidence that chemical stressors are the major driver of adverse effects on the biotic condition (as measured by indices of biodiversity (IBI)) of inland freshwaters and what is the relative contribution of other habitat factors in shaping aquatic biodiversity? Additionally, are exposures to chemical stressors or natural toxins from algal blooms of highest priority concern in cases where the habitat (e.g. substrate, low dissolved oxygen), riparian (e.g. shading from trees) and/or catchment (e.g. % impervious surfaces, hydrographs, temperature) have also been altered? Key questions for resource managers, regulators, and stakeholders are: What stressor(s) should be considered in improving our risk estimates and what measures can best inform these estimates and, give a range of remedial alternatives, which options provide the most feasible and reliable outcome in improving risk situations? To develop strategies for preserving or restoring biotic condition, we need a framework to prioritize all the stressors impacting biotic condition. Further, specific questions are provided below: •How do we integrate acute and chronic toxicity data, IBI metrics, species sensitivity distribution data (SSD), species traits and habitat suitability indices (HSIs) in a quantitative manner to prioritize chemical and habitat stressors? •What temporal or spatial scale should we use? •Are models available that integrate these stressors and their metrics to prioritize them so that it helps countries focus their monitoring and assessment programs to be more effective in protecting and restoring aquatic resources? •Can we manage these resources considering only one particular stressor as the most important when typically, many natural and anthropogenic stressors are interacting in complex mixtures and interacting with habitat alterations? The session will provide presentations that address these questions and/or propose approaches to accomplish the goal of ranking chemical and nonchemical stressors at various scales (e.g. stream, lake, watershed, region, continental, global).

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

James Lazorchak [160726]
Ben Kefford [188939]
Marc Mills [177323]
Dionysios Dionysiou [309960]
Mark Johnson [163329]

SUBMITTER: James M. Lazorchak

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecological Risk Assessment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Immunotoxicology: impacts of contaminants on immune function and susceptibility to disease

DESCRIPTION: While in the natural environment organisms are constantly surrounded by pathogens, adequate immunocompetence enables individuals to maintain good health by avoiding infection and disease. The disease triangle is a conceptual model which states that the environment plays an important role in host - pathogen interactions. In fact, environmental perturbations such as exposures to anthropogenic contaminants are of alarming concern because they can impair immune responses, potentially putting fish and wildlife at risk of disease, death and population declines. In light of the fact that more than 700 commercial chemicals are introduced to the US market each year, and that we often know little about their adverse immunological effects on non-target organisms, it is critical that the potential for these chemicals to affect immune system function be investigated. Furthermore, in an era of rapid climate change, the impacts of environmental stressors (including, but not limited, to altered temperatures, increases in hypoxia events, harmful algal blooms, and ocean acidification) on immunocompetence and infectious disease survival are not clearly understood. As such, studying, evaluating and reporting how environmental stressors affect susceptibility to infection and disease can help us better define ecosystem health measures. Ultimately, by better understanding stressor-induced immune alterations, immunoeco[toxico]logists as a group can identify immunotoxicity screening methods and propose additional endpoints relevant to environmental risk assessment.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Jone Corrales [195790]
Marlo Sellin Jeffries [177715]
Leah Thornton [303139]

SUBMITTER: Jone Corrales

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Our goal is to increase understanding of the state of immunotoxicology in the field of environmental toxicology. Attendees will hear that contaminants and other environmental stressors of anthropogenic origin predispose organisms to infectious disease and that pathogen-host interactions can be impacted. By the end of the session, we hope to bring enough evidence for the relevance of immunotoxicology as an additional endpoint relevant to risk assessment. Worth noting is that in the recent past, limited work on the subject has been included in the program of SETAC North America. However, interest seems to be shifting; for example, while in Vancouver there were 14 presentations focused on the direct effects of contaminants on the immune function, in Orlando the number increased to 23. The session is likely to attract scientists interested in immunotoxicology that perhaps currently only opt to attend Society of Toxicology meetings, which always include a session in immunotoxicology. Therefore, this session could potentially lead to new members. The session co-chairs include a research scientist, professor in academia and graduate student, each of whom has an interest in immunotoxicology. To ensure representation across all sectors, the session chairs have already identified 7 academics, 5 government researchers and at least 1 industry scientist interested in immunotoxicology. Finally, the session will support the One Health concept, which recognizes that the health of humans, animals and ecosystems are interconnected and is now endorsed by the European Commission, the US Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), Food and

Agriculture Organization of the United Nations (FAO), and World Organization for Animal Health (OIE) among others.

TITLE: Impacts of sulfate inputs to freshwater ecosystems in the Great Lakes Region

DESCRIPTION: Inputs of sulfate to freshwater ecosystems can initiate a cascade of geochemical and ecological consequences related to mercury cycling, plant populations, and eutrophication. Well-documented impacts from atmospheric inputs and sea-water intrusion have shown sulfate contributes to alkalinity generation, enhanced mercury methylation, and enhanced carbon degradation. Recent investigations have also illuminated the potential for impacts due to point and non-point source sulfate discharges to inland surface waters. This proposed session will bring together ecologists, toxicologists, and geochemists from both academia and resource management agencies to present the results of field observations and experimental manipulations related to sulfate's impacts on freshwater environments. The State of Minnesota is presently grappling with a review of a restrictive surface water quality standard for sulfate in waters used for the production of wild rice, a sensitive freshwater wetland plant. The health of this important economic and cultural resource hangs in the balance with water treatment requirements for point and non-point discharges of sulfate to surface waters. Abstracts are invited for presentations that will contribute to this focused discussion among a diverse set of scientists and regulators.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Nathan Johnson [184723]
Douglas Fort [164162]
Edward Swain [305080]

SUBMITTER: Nathan W Johnson

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Salinization of Freshwater (Global)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: As a result of the buzz about sulfur in the context of ongoing and proposed mining activities in the Minnesota region (Minnesota, Wisconsin, Ontario), we expect that this session could generate significant interest from a local/regional audience. An insightful and well-attended session about sulfur cycling was facilitated at the 2016 SETAC meeting in Florida in the context of a local issue (Everglades mercury / plant species); while we expect a significant portion of this session will focus on regional issues, we anticipate participation from a broader swath of national and international SETAC members. We have discussed presentations in a session such as this with several local/regional researchers and all have been positive in their responses. We plan to solicit 4-5 invited presentations from colleagues and will also solicit abstracts/presentations from researchers active in studying sulfate geochemistry/ecology northern Europe. The remaining presentation and poster slots will be filled from abstracts received.

TITLE: Implementation of TSCA as Amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act - Science Issues

DESCRIPTION: On June 22, 2016, the Frank R. Lautenberg Chemical Safety for the 21st Century Act, which amends the Toxic Substances Control Act (TSCA), the Nation's primary chemicals management law was signed into law. The amended TSCA includes several new mandates, including: (1) a mandatory requirement for EPA to evaluate existing chemicals with clear and enforceable deadlines; (2) a new risk-based safety standard for both new and existing chemicals; (3) increased public transparency for chemical information; and (4) a consistent source of funding for EPA to carry out the responsibilities under the new law. Several of the new provisions of TSCA require additional science-based approaches to be developed, advanced and/or applied. Under section 4 of TSCA, EPA must reduce and replace, to the extent practicable, and must encourage and facilitate the use of scientifically valid test methods and strategies that will support regulatory decisions. Under section 5 of TSCA, EPA must make an affirmative finding with regard to unreasonable risk, often with very limited information available, which requires application of predictive models and estimation approaches and/or requests for testing when information is insufficient to make a reasoned evaluation. Section 6 of TSCA requires that EPA develop a risk-based screening process to identify high-priority and low-priority chemicals for further risk evaluation. This prioritization process must include considerations of hazard, exposure potential, persistence and bioaccumulation among other things. Risk evaluation must be conducted for all chemicals designated high-priority and must integrate and assess available information on hazards and exposures for the conditions of use of a chemical substance. Furthermore, EPA must also apply a number of scientific standards in carrying out sections 4, 5 and 6 of TSCA, including to use scientific information in a manner consistent with the best available science and consider as applicable reasonableness, relevance, clarity and completeness, variability and uncertainty, and peer review. In the interest of facilitating a scientific discussion and dialog regarding scientific approaches, databases, tools & models that may be brought to bear in implementing amended TSCA, we are seeking presentations on the following topics, particularly as they are available or apply to ecological receptors and ecosystems: alternatives to vertebrate testing and species extrapolation tools/models; tiered testing schemes for ecological systems; predictive tools such as (Q)SARs, expert systems, and analog identification techniques; and systematic review approaches - especially including reliability and relevance considerations and weight-of-evidence approaches.

TRACK: Regulatory Directions

CHAIRS:

Tala Henry [161867]

Stuart Cohen [161218]

SUBMITTER: Stuart Z. Cohen

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Implementing the three pillars of sustainability in assessment and decision making

DESCRIPTION: Sustainable development requires holistic decision-making to ensure environmental quality, social justice, and economic viability, commonly referred to as the triple bottom line. In the context of specific applications, sustainability can be more narrowly defined, but it should ensure that the benefit of undertaking an action is greater than its impact, and that actions are selected through the use of a balanced decision-making process founded on quantitative metrics. However, while the term "sustainability" is increasingly used to describe specific research, products, and actions, what makes something sustainable (i.e. what is being sustained) is often not clearly articulated or measured, or is focused on only one or two of the three pillars of sustainability: economic, environmental, social. There is a critical need to develop tools and metrics that can address the three pillars of sustainability and their interconnections, to better measure, articulate, and encourage sustainability. Additionally, managing differences in how sustainability concepts are used in science, management, and regulation, and in different international contexts, will be vital for meta-analysis. This session is intended to broaden the discussion of sustainability in assessment and decision-making by identifying research capabilities and gaps in translating systems-thinking into quantitative evaluation. Individuals interested in presenting holistic approaches, models/tools, or metrics, especially those that advance capabilities in modeling social impacts or interconnections between the three pillars, are encouraged to submit abstracts.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Hanna Breunig [198593]
Deborah Carr [183024]
Kristen Hitchcock [188856]

SUBMITTER: Hanna Breunig

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Sustainability Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: This is a duplicate of the previous session submission, as the session was submitted before the following comment could be added: This session could fit under either the "Integrated Environmental Assessment and Management" track or the "Linking Science and Social Issues" tracks. We are very open to operating under whatever session track avoids potential conflicts with the Ecosystem Services (ES) and Life Cycle Assessment (LCA) sessions, which our Sustainability Interest Group has cosponsored. Thank you for your consideration.

TITLE: Improving the environmental assessment of complex composition substances and mixtures for Chemicals Management

DESCRIPTION: Chemical safety assessment (CSA) is a stepwise approach which includes hazard (including PBT) and exposure assessments. The fundamental principles of various steps of CSA's are well established in several regulatory systems across the globe. However, the CSA of substances of complex composition like Multi-Component Substances (MCSs) or substances of Unknown Variable Composition and Biological substances (UVCBs)) present unique assessment challenges. Several international regulatory chemicals assessment schemes (like e.g., REACH in the EU, DSL in Canada, or TSCA in the US), have highlighted the complexities and uncertainties related to the registration, characterization, hazard, exposure, fate and consequently the outcome of the risk assessment of these materials. Moreover, while scientific progress has been made in assessing these common substances, there is a clear societal and regulatory need for the further development of scientific assessment methodologies given the implementation of the traditional steps of CSA are not possible without specific adaptations of existing "classical" methodologies. To ensure that these substances can be handled and used safely, there are many different aspects which need to be considered, in particular: substance identification, assessment methodologies and risk management. The identification of the substance is a first and critical step in each of the regulatory systems. Subsequently, different approaches and methodologies are needed for various chemical management schemes whether voluntary systems or for regulatory approaches like REACH for these complex composition substances (e.g. the assessment of combined exposure and combined toxicity). The purpose of this session is to present and report on recent scientific work and progress made on strategies to assess, for example, the environmental combined toxicity (e.g. for metals and inorganics), Cumulative Environmental Risk Assessment (for Personal Care products and for petroleum substances), strategies for the assessment of Natural Complex Substances (NCS), PBT assessment of complex substances by ECHA, or defining characteristics for organic UVCBs (OECD). Furthermore, there is a need to explore how their risk assessment outcome can subsequently be used for risk management to achieve the international goals of the UN-SAICM (Strategic Approach to International Chemicals management). In this session we aim at attracting industry, academia and regulators presenting recent and new scientific approaches and case studies on different type of complex composition chemicals' safety assessment approaches that can be used in the decision making and for chemicals managements.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Daniel Salvito [167980]
Eric Van Genderen [305006]
Michelle Embry [166510]

SUBMITTER: Daniel T. Salvito

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: In vitro to in vivo extrapolations: advances and applications for risk assessment

DESCRIPTION: In vitro to in vivo extrapolation (IVIVE) describes the process to estimate an in vivo exposure concentration in target tissues that is equivalent to the concentration necessary to produce the observed effects in vitro. Many commercial and environmental chemicals lack toxicity data to inform potential health and ecological effects. High-throughput in vitro cell- or biochemical-based tests can provide chemical specific data for key events at an exponentially faster rate than traditional toxicity testing, reducing resource needs (e.g., animals, time, funds); however, correlating test chemical concentrations that produce in vitro effects to exposures that demonstrate in vivo toxicity is complicated. In ecological risk assessment applications, in vitro points of departure (POD) or AC50s, coupled with IVIVE, could be used to provide screening-level estimates of in vivo toxicity or endpoints for contaminants that lack animal test data. These IVIVE approaches rely on toxicokinetic (TK) models and related parameterization tools to account for key processes such as absorption, distribution, metabolism, and excretion processes (ADME). In addition, because toxicity testing traditionally relies on a limited number of surrogate species, in vitro methods coupled with IVIVE may improve read-across predictions of adverse effects, allowing for more comprehensive development and refinement of AOP models. This session will focus on the methods, models, approaches and outcomes of IVIVE for ecological species. Talks on modelling approaches, measurement techniques, methodologies to account for ADME processes in in vitro systems, in vitro / in vivo comparisons, and incorporation of in vitro methodologies in risk assessment are welcome.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Michelle Embry [166510]
Scott Lynn [161624]
Kellie Fay [196900]

SUBMITTER: Michelle Rau Embry

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Animal Alternatives in Environmental Science (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Incorporating environmental toxicology into the classroom

DESCRIPTION: Many gains have been made in the science of teaching and learning. Teacher/Scholars are beginning to adapt these methods to a variety of fields including the sciences. The American Association for the Advancement of Science (AAAS) has put out a call to improve teaching and learning in undergraduate biology. In "Vision and Change in Undergraduate Biology Education: A Call to Action" AAAS support a focus on skills such as critical thinking, problem solving/evaluating, and communication alongside the teaching of core concepts. Ultimately, creating dynamic classrooms that use best practices to engage students and to incite their own interest in particular topics is essential to foster students to join the next generation of environmental scientists. Although many academics publishing research in environmental toxicology are also teaching the subject in courses either directly related to the field (toxicology courses) or incorporating these topics into other courses (non-majors, freshman, etc.); there is limited research on toxicology pedagogy. The continued exchange of ideas for how to excite and engage students on the subject of environmental toxicology is important to ensure recruitment of top students into the field. We invite presentations on novel ways to incorporate environmental toxicology into the classroom. Topics may cover the science and teaching of learning, reporting of specific activities, laboratory projects, or the use of new technology to enhance teaching toxicological topics. We also welcome examples of integrating environmental toxicology into community engagement, service learning, "flipping classrooms" and other topics in the field of teaching and learning. Presentations may cover any subject within the purview of SETAC including environmental chemistry, bioaccumulation, wildlife toxicology, etc. We welcome research from classes of all sizes as well as institutions of all sizes. We are especially interested in the idea of course-embedded research and the ways to engage students in the practice of science and "learning by doing".

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Amanda Harwood [180810]

Scott Weir [183865]

SUBMITTER: Amanda D Harwood

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: We are open to other session tracks as this topic spans the various research interests of SETAC.

TITLE: Integrated Screening and Assessment: Hazard to Risk to Decision Analysis - Single Chemicals to Mixtures

DESCRIPTION: Regulatory methodologies incorporate hazard/risk screening steps prior to proceeding with an in-depth assessment phase. In contract, non regulatory evaluation of products focuses on hazard alone, often performed on single chemicals regardless of concentration. Most hazard screening systems score evaluations in "bucket" effects (i.e. low, medium, high) without considering exposure or allowing for a summation of effects. Consequently the hazards/risks of one chemical do not represent the hazard/risk of the entire mixture or product. At minimum, stakeholders within the value chain need screening methodologies for both hazard and exposure. Risk produces a clearer picture of what hazards in their use context contribute to over chemical (mixture) safety; whereas hazard analyses/assessments alone identify the inherent chemical hazard in its "buckets." With the movement toward alternatives assessments, future tools will need to evaluate criteria beyond hazard and exposure and include elements like environmental impacts, life cycle, and performance. The new challenge for Alternatives Assessments is to gather information/data for hazard, exposure, life cycle, performance, and more, which are in incompatible "units" and data gaps are often filled via Read-Across or non traditional data sources such as ToxCast21 Since most chemicals will not register low or green for all endpoints, how and what criteria are used to weigh a medium or high score becomes a critical decision. Hazard screening by itself can also produce skewed results. When chemicals only occur at low concentrations in commercial products their effects may be overstated when based on simple hazard screening methodologies such as lists. But when hazard and exposure are considered together, a clearer understanding of how much a particular chemical's endpoints/hazards contributes to the overall risk of a chemical (or mixture).

TRACK: Regulatory Directions

CHAIRS:

Hans Plugge [311893]

Ann Mason [309918]

SUBMITTER: Hans Plugge

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Human Health Risk Assessment Interest Group (North America)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Integrated tools for improving environmental fate and risk assessment for unregulated contaminants and their mixtures

DESCRIPTION: Many diverse chemical constituents are present in water, yet most occurrence and fate studies focus on relatively small suites of analytes in these complex mixtures. Assessing the human and ecological risks, and possible exposures to, poorly characterized mixtures is difficult, and further complicated by the trace levels of many of these chemical species. In combination with uncharacterized or unreported contaminants, novel transformation products can be expected to form which can exhibit environmental fate and bioactivities distinct from their parents. In sum, there remain many important characteristics of complex mixtures that we simply don't know about. To overcome these difficulties, we will need new analytical and assessment tools to address the chemical complexity of modern water resources. These might include broad spectrum screening approaches built upon high resolution mass spectrometry, high throughput bioassays for monitoring chemical and mixture effects, and computational screening tools for predicting transformation pathways, yields and chemical interactions with biological endpoints. Many of these approaches are complementary, and integration of these techniques could help to strengthen our capabilities to evaluate the occurrence, persistence and risks of currently unregulated or emerging contaminant classes while also lessening the need for intensive laboratory investigations. This session will highlight recent advances in the use of new and innovative assessment, screening, and detection tools for assessing the fate and risks of unregulated and unreported contaminants, emerging pollutant classes, and their mixtures. A particular emphasis will be placed on studies and investigators attempting to use multiple approaches in a complementary or integrated fashion to address the challenges posed by the number and diversity of chemical pollutants and fate processes available in aquatic systems.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Kristine Wammer [167209]
David Cwiertny [193457]
Edward Kolodziej [164279]

SUBMITTER: Kristine H. Wammer

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Potential speakers include: Kathrin Fenner, Eawag; Marcella Card, US EPA; P. Lee Ferguson, Duke University; Beate Escher, Helmholtz Center for Environmental Research, GmbH – UFZ; Lawrence Wackett, University of Minnesota; Ruben Abagyan, UCSD

TITLE: Lingering impacts of oil and fuel spills: fate and toxicity of persistent hydrocarbons and polar metabolites

DESCRIPTION: Inland oil spills from trains and pipelines together with fuel leaks from underground storage tanks (UST) are a lingering source of contamination for soil, groundwater and surface water. Natural biodegradation has been widely embraced as a remedial strategy for fuel and oil spills, but a number of limitations of this policy have been documented recently. These include long time frames, persistence of residual oil and gas as an ongoing contaminant source, formation of polar metabolites, and mobilization of reduced metals. Progress is needed on techniques to characterize the long term risk at former and future spill sites. Possible topics include source zone natural attenuation, fate and toxicity of polar metabolites, hydrophobic soils, secondary water quality impacts, and mass-balance modeling.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Jennifer McGuire [309785]

Jared Trost [313887]

SUBMITTER: Jennifer McGuire

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Making the Best Use of 21st Century Toxicology in Sustainability Decisions

DESCRIPTION: This session is intended to bring together toxicologists, exposure scientists, assessment practitioners, and decision makers to a) explore the issue of effects modeling as it relates to decision needs and b) identify potential paths forward given the current state of the science. Increasingly, decision makers are being asked to answer questions about the sustainability of chemicals, products, or activities. Life Cycle Assessment (LCA), Risk Assessment (RA), and Alternatives Assessment (AA) are among the tools that may be used to address these issues. A key aspect of such questions for any of these tools is understanding a chemical's effects on human and ecological health. Traditionally, effect models underlying these tools have been derived from methods such as controlled human population observational studies or toxicity data generated by in vivo testing. Such methods can require a large amount of time and resources, making them ill-suited to keep pace with the accelerating rate at which new chemicals enter commerce each year. Recent advances in toxicology research have focused on rapid or high-throughput methods as a means to increase the availability of effects knowledge, though potentially at the expense of increased uncertainty. While there are some examples of applying these data for decision needs, assessment communities generally lack consensus guidance on how best to incorporate these emerging datasets into effects models, especially given that the appropriateness of such data for assessment tools will vary depending on the decision needs. This session is co-sponsored by the, Ecological Risk Assessment Interest Group, Human Health Risk Assessment Interest Group, North American Life Cycle Assessment Interest Group and Sustainability Interest Group. Individuals wishing to address advances or needs in toxicology and effects modeling on behalf of any of these perspectives are encouraged to submit abstracts.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

David Meyer [309176]
Hanna Breunig [198593]
Yvette Lowney [302861]
Annemette Palmqvist [173832]

SUBMITTER: David Edward Meyer

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: This is a joint platform between the North American LCA, Sustainability, Ecological Risk Assessment, and Human Health Risk Assessment IGs. We may possibly look to structure the session with a panel discussion after the talks.

TITLE: Measurements and Methods in Environmental Nanotechnology in Aquatic Systems

DESCRIPTION: The exciting properties of nanotechnology have already resulted in their incorporation into consumer goods with increasing applications expected in future years. This may, in turn, result in their release into the environment. One of the principal challenges regarding understanding the risks associated with the release of nanoparticles is that new measurement methods are often needed both for the detection of these materials and for the assessment of their corresponding risks. The goal of this symposium is to keep the researchers in our field updated on the current research progress related to method development in environmental nanotechnology. This symposium will focus on but is not limited to i) applications of analytical methods and experimental approaches that enable analyses of the environmental fate, surface characteristics, quantification, aggregation, and transformations of nanoparticles in environmentally relevant biotic or abiotic media, and ii) method development for assessing the ecological risks of these materials through the application of new or uncommon toxicology techniques to nanoecotoxicology, identification of important potential artifacts or measurement considerations in nanoecotoxicology, or investigations of the extent to which previous standard methods can be applied to studies with nanoparticles.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Elijah Petersen [186624]

Brian Mader [185492]

SUBMITTER: Elijah Petersen

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Nanotechnology Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Microplastics in the Aquatic Environment: Fate and Effects

DESCRIPTION: Our understanding of presence and effects of microplastics in the aquatic environment is in its infancy and research needs to be performed to address the fate and effects associated with this class of environmental contaminants. Research areas associated with microplastics include the need to (i) standardize methods for their isolation and identification in environmental samples, (ii) investigate the presence and distribution of microplastics globally, (iii) evaluate the ability of microplastics to serve as a transport medium for and source of conventional and emerging contaminants, and (iv) assess the biological and ecological effects of microplastics. Addressing these broad research areas will ultimately provide the information necessary to determine whether or not the regulation of microplastics is necessary and requires promulgation. For example, there is ample evidence that microplastics are ingested by many aquatic organisms including edible seafood and shellfish. To begin to address these gaps in our understanding, a platform and poster session titled Microplastics in the Aquatic Environment: Fate and Effects is proposed for the Society of Environmental Toxicology and Chemistry-North America meeting in Minneapolis, MN, USA in November 2017. The goal of the session will be to provide the audience with a current overview of the research associated with microplastics in the aquatic environment.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Kay Ho [162148]

Robert Burgess [164424]

SUBMITTER: Kay T. Ho

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: More Data is Not Always Better: Using Weight of Evidence Approaches in Environmental Risk Characterization.

DESCRIPTION: Characterizing various measures of toxicity and exposure into a risk matrix is rarely straightforward. Often stakeholders can all agree on the integrity of the data, but rarely is there agreement on what the data mean in a risk assessment context. Toxicity data can vary depending on methodology, species, and interlaboratory differences. Field data may vary depending upon site-specific criteria. All forms risk the probability of false positive and negative outcomes. This session is devoted to the exploration of new methods developed to interpret similar and disparate data streams. Presentations will cover specific examples of ecological and human health concerns where environmental exposures were issues of study and provide novel approaches in harmonizing assessment measures into meaningful characterizations of risk for decision making.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Mark Johnson [163329]
Mary Sorensen [169508]
John Toll [166269]

SUBMITTER: Mark S. Johnson

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecological Risk Assessment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Topic will include examples from ecological as well as human health risk assessment.

TITLE: Neonicotinoid Insecticides: Potential impacts on non-target organisms and ecosystems

DESCRIPTION: Neonicotinoids are the fastest growing and most widely used class of insecticides in the world. Registered for use in over 120 countries, their widespread use is due in part to their versatility in application including foliar sprays, soil drenches, and seed treatments. However, neonicotinoids continue to garner increased scrutiny due to their implication in pollinator declines and as potential aquatic toxicants. The rapid growth of seed coatings throughout the United States, Canada, and Europe has increased concern over neonicotinoid fate, transport, and effects across a range of scales. In particular, the potential effects (both direct and indirect) of the parent compound and their metabolites to a wide range of non-target organisms and ecosystems remain relatively unknown. One current challenge is the differences highlighted between lab studies and fate and impacts of these compounds in the environment. Evaluating neonicotinoids as environmental stressors, especially toward non-target species, is further complicated by their behavior in systems where many factors are interrelated and may vary spatially and temporally. Field-level studies examining chronic exposure toward terrestrial and aquatic organisms or the potential reduction of ecosystem services are limited. Because of toxicity concerns, some countries are re-evaluating these compounds or have limited the use of neonicotinoids in recent years. Therefore, the goal of this symposium is to highlight current research from government agencies, industry, and academia. In this session, we will emphasize neonicotinoid field studies in the following areas: (1) occurrence in the environment and organisms (e.g., water, soil, sediment, plants); (2) direct and indirect effects on non-target organisms (e.g., aquatic insects, native pollinators, amphibians, birds); (3) trophic-level impacts (e.g., movement between trophic levels, implications for energy transfer between trophic levels); (4) changes in ecosystem function, as a result of biotic response; and (5) interactions with other environmental stressors.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Anson Main [302942]
Michelle Hladik [177667]
Lisa Webb [313845]

SUBMITTER: Anson Main

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: The widespread use of neonicotinoid insecticides is a timely environmental issue. As neonicotinoid use continues to grow in spatial extent, their potential effects on non-target biota and implications for ecosystems are only beginning to be understood. For example, these insecticides are garnering increased scrutiny due to their implications in pollinator declines and as potential aquatic toxicants. Last year, we held a session on neonicotinoid fate and effects at the SETAC World Congress in Orlando and had an overwhelmingly high number of both abstracts submitted and attendants to the session. We are hoping to build on that momentum to bring together the current state of knowledge from government, industry, and academia.

TITLE: New approaches to ecological risk assessment: bridging adverse outcome pathways to dynamic energy budget models.

DESCRIPTION: In ecotoxicology research, two approaches have been gathering support because of how each tackles problems related to risk assessment. One is the adverse outcome pathway (AOP) framework which links molecular initiating events to adverse outcomes at higher levels of biological organization. The second approach is dynamic energy budget (DEB) modeling that employs a mechanistic approach to determining allocation of energy to growth and reproduction and that can be applied to multiple species. Furthermore, DEBs have been embedded into individual-based models (IBMs) allowing for extrapolation to population impacts. This session group will bring together a multi-disciplinary group of molecular biologists, systems biologists, DEB and AOP modelers, ecotoxicologists and mathematicians with interest and expertise in developing dynamic, mechanistic models to predict impacts on individuals of a variety of different species from high throughput assays used to screen chemicals for potential risk. The session will showcase a case study approach to demonstrate proof of concept and that aims to develop, not only example models, but a general framework for model development, evaluation, and communication that can be applied across different levels of biological organization and ecotoxicological endpoints.

TRACK: Regulatory Directions

CHAIRS:

Cheryl Murphy [163988]

Roger Nisbet [178340]

SUBMITTER: Cheryl A. Murphy

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: We would like to propose this session as special symposium. Our topic was a popular session at the SETAC meeting in Orland (165 people in attendance) o, and we will have made considerable progress since November last year. Furthermore, there are several groups in EU who are working on this topic, and we anticipate that we will easily fill the session with eight platform presentations. We would like to schedule a discussion panel as well at the end of the symposium. It is a timely and relevant topic with potential to help screen thousands of chemicals on thousand of species.

TITLE: New approaches to long-standing challenges with metals: TRV development and evaluating effects in the field

DESCRIPTION: : Approaches for applying toxicological information to metals risk assessments are continuously evolving and their adoption varies among different jurisdictions and global regions. These approaches include application of benchmark dose models (BMD) for wildlife, tools for considering bioavailability and background concentrations of metals in soil, biotic ligand models (BLMs) for evaluating metal bioavailability and toxicity in surface water and pore water, and multivariate statistical models for predicting metal toxicity to biota as a function of multiple parameters that influence bioavailability. Further refinements are being made with consideration of collection of the most appropriate toxicology data, the specific metal form, metals mixtures, specific receptor species, and development of toxicity test systems and field methods for evaluating the effects of metal mixtures on communities. The integration of information on site specific exposure conditions is also evolving. This session will present examples which build off current practice, demonstrate new models or new approaches with existing models, identify critical needs, and forecast future practices for metal TRV development to improve risk assessments and risk based decision making.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Nancy Judd [163374]
Mark Johnson [163329]
David Mayfield [192022]

SUBMITTER: Nancy Judd

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecological Risk Assessment Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: We anticipate a lot of interest in this session!

TITLE: Next Generation Nanotechnology: Environmental Health and Safety of Nano-enabled Products and Advanced Materials

DESCRIPTION: This session will focus on environmental health and safety (EHS) of engineered nanomaterials (ENM) as they are used in nano-enabled products (NEPs) or directly (e.g. zero-valent iron in groundwater treatment), and will expand the discussion to address advanced materials. Advanced materials, which are inclusive of nanomaterials, are materials that are specifically engineered to exhibit novel or enhanced properties that confer superior performance relative to conventional materials, but are not necessarily defined or limited by size. The goal of this session is to shift focus from EHS studies of pristine ENMs, produced specifically for EHS studies, to ENMs, NEPs, and advanced materials as they are actually manufactured and used. ENMs, NEPs, and advanced materials present common technical and regulatory challenges that derive from their unique properties and behaviors, and uncertainty concerning their potential for release to the environment during the full life cycle, and their potential toxicity. The session chairs recognize that advanced materials are an emerging EHS concern, and expect that this session will serve in part to educate the SETAC community on the topic while being inclusive of studies on nano-enabled technologies. Submissions appropriate to this session will include presentations focusing on EHS experimental issues and methodologies related to actual NEPs or advanced materials, rather than focused solely on pristine ENMs. These may include presentations that will provide overviews of the science of advanced materials development, relationship to nanotechnology, and EHS issues and approaches that mirror, or expand on those recognized for ENMs. Topics may range from advances in regulatory and risk assessment approaches for as-used ENMs, NEPs, and advanced materials, to studies that focus on estimating, or testing and measuring, release of ENMs from NEPs (or during direct application), to toxicity of potentially released materials. Planned Designated Presenters: NanoSafe, Inc. - Example of risk evaluation of a complex, nano-based material USARCE/ERDC - Methods and tools development for nanotechnologies and advanced materials BASF, 3M, Brewer Science, other - Industry perspective on advanced material EHS NIST - Description of advanced material testing program and its relationship to nanotechnology TBD - One or two presentations on complex NEP EHS assessments

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Stephen Diamond [162405]

Alan Kennedy [163917]

SUBMITTER: Stephen A. Diamond

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Nanotechnology Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Oil and Gas Waters: Integrating Analytical Chemistry and Toxicology to Inform Management Decisions

DESCRIPTION: Produced water and flow back waters pose challenges for managers in the extraction of oil and gas resources. During extraction, a significant amount of water is produced and may contain elevated concentrations of major ions and organic chemicals. Management options for produced water and flow back waters include reuse for ongoing operations, on site disposal, or removal and management off site. Reuse for ongoing operations requires a comprehensive understanding of the chemical constituents and the potential optimization of reuse with additional additives. On site placement is implemented at the end of the production of the well and, in some cases, requires documentation of the chemicals contained in the water. Off -site disposal of the waters requires an understanding of composition for appropriate disposal or reuse. All of these management options require the balance of the benefits of water reuse as well as the costs of water treatment or reconditioning. Additional handling also poses added risk for the potential of accidental releases or spills. All of these management decisions rely on a common set of chemistry and ecotoxicology data requirements by resource managers and industry. The goal of this session is to highlight current research that supports this decision making process. This session will include presentations of sound science from academia, government, and industry that provide or utilize chemical and toxicology data on the chemicals in oil and gas waters.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Jeff Steevens [169827]

Aida Farag [163573]

SUBMITTER: Jeff A. Steevens

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: The chairs of this session have identified several members from across academia, gov, and industry to highlight in this session. Of key interest is that we are bringing new members from industry sector to discuss their needs in the context of management and decision-making. It will be a great session that takes previous discussions to the next level of management.

TITLE: PAH Mixtures in the Environment: Identifying Sources and Assessing Risks

DESCRIPTION: Polycyclic Aromatic Hydrocarbons (PAHs) are ubiquitous in the environment (indeed, it has been estimated that about 20% of the carbon in the universe occurs in PAH compounds), and have been the focus of increased regulatory concern even though the extent of adverse impacts remains uncertain. In 2010 USEPA proposed to increase the list of potentially carcinogenic PAHs from seven to 25 with some being proposed as significantly more potent than the index compound, benzo(a)pyrene (BaP). But in January 2017, USEPA finalized an oral toxicity factor for BaP based on a 1990s bioassay that shows lower overall carcinogenic potency. USEPA's previously proposed first ever Dermal Slope Factor was not included in the recent Toxicological Review, but the Agency has not abandoned its work to quantify the carcinogenic potency of BaP on skin. Regulatory actions have been inconsistent. Sometimes the focus is on whole PAH-containing substances but often the focus is on individual PAH constituents using the Relative Potency Factor (RPF) approach. In 2016, Environment & Climate Change Canada used a Margin of Exposure assessment calculated based on BaP and benzene content for six coal tar and fractional distillate materials. EU REACH has included several individual PAHs on its Substances of Very High Concern (SVHC) list even though individual PAHs do not occur in the real world, and factors such as bioavailability/ bioaccessibility modify actual risks. In the US, EPA's TSCA program prefers to emphasize whole mixture risks, but the Agency's provisional RPF approach is widely used in other programs. To add another level of complication, recent work suggests that PAH mixtures derived from different sources may have different exposure characteristics. Exposure to PAHs has been a part of life throughout geologic time. They are always present as complex mixtures, not individual compounds. Real risks to human health or ecological impacts may not be accurately assessed by controlled laboratory experiments with individual compounds at high doses. In this session, presentations will evaluate methods for identifying sources and sinks for PAHs released into the environment, bioavailability of PAHs in products and environmental media, laboratory-based toxicity of human and ecological receptors to PAHs, real world toxicological responses to humans and ecological receptors, bioavailability of PAHs in products and environmental media, and typical background levels of PAHs.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Anne LeHuray [194728]

SUBMITTER: Anne LeHuray

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Goals: The goal of the session is to highlight issues associated with analytical and toxicological evaluations of PAHs, which often focus on individual compounds, in contrast to real world chemistry and exposure, which always involves materials that contain PAH mixtures. Attendees will hear about the latest laboratory and evidence-based research focused on the environmental occurrence, exposures and potential risks associated with PAHs and PAH-containing substances.

TITLE: Perfluoroalkyl Acids (PFASs) In Minnesota: Historical and Current State of Affairs

DESCRIPTION: The 3M Company (3M) produced PFAS at its Cottage Grove facility in Washington County, Minnesota from the late 1940's until 2002. PFAS-bearing wastes were disposed of at both on and off-site locations. The extreme persistence and mobility of PFAS chemicals resulted in groundwater plumes that cover an area of over 100 square miles, affecting four major aquifers and impacting the municipal water supplies of eight communities and thousands of private drinking water wells. Groundwater and surface water sampling revealed a complex transport history that explains the genesis of this megaplume. The purpose of this session is to offer a platform to present 1) the complex fate and transport of PFAS in Minnesota, 2) the results of longitudinal biomonitoring of exposed residents, and 3) the advances in methods for deriving human health-based drinking water guidance that incorporate the bioaccumulative nature of the contaminants as well as indirect exposures such as breastfeeding.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Ashley Suchomel [305994]

SUBMITTER: Ashley Suchomel

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Pharmaceutical Transformation Products

DESCRIPTION: The aim of this session is to bring together a well-rounded perspective on pharmaceutical transformation products (TPs) in the environment. This session will highlight the occurrence and distribution of TPs in wastewater treatment plants, receiving waters, groundwater, and sediments. Factors affecting attenuation/ transformation can include pH, ionic strength, amounts and types of organic matter, and mechanisms for sorption of these ionisable compounds. Engineering technologies for degradation of pharmaceuticals (e.g. different sludge types, SRTs, different secondary or tertiary treatment resulting in varying TP levels) will also be highlighted in the pursuit of identifying the current and new ways to treat wastewater.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Alistair Brown [305892]

SUBMITTER: Alistair Brown

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Pharmaceuticals in the Environment: Potential Human Health Impacts

DESCRIPTION: Pharmaceuticals are increasingly monitored for in potential water sources throughout the world. They have been detected in wastewater, surface water, and groundwater, and have been shown to survive drinking water treatment processes used to remove other contaminants. The active ingredients are formulated to produce a beneficial effect in humans and animals when taken as prescribed, however, the potential effects on humans from unintended exposure is still being explored. The potential impact could include direct toxicological effects as well as indirect effects such as increased microbial resistance. The purpose of this session would be 1) to offer a platform to present work related to methods and results of providing context to environmental detections of pharmaceuticals, including mixtures, and 2) to explore indirect effects on human health beyond potential toxicity through unintended exposure.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Ashley Suchomel [305994]

SUBMITTER: Ashley Suchomel

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Plastics in the environment: risk implications to ecological health

DESCRIPTION: Recent scientific work on plastics has been focused on microplastics and largely in the aquatic environment. These data suggest that there are risks to aquatic life ingesting microplastics. Some work has been done in the terrestrial environment as well but more is needed; for example microplastics in applied sludge. The importance of plastics in the environment was reflected in a special issue of ET&C (July 2016) focused on plastics in the environment. This session is intended to present papers that evaluate the potential for ecological risk posed by all types of plastics in the environment (micro, macro, aquatic, terrestrial) and to evaluate a range of receptors and their associated environmental exposures. Work on plastics in the environment has been increasing both in the United States and in Europe. This session will be jointly sponsored by the North American Science Committee and the European Science Committee.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Sue Robinson [167120]
Markus Hecker [161829]
JÃ¶rg Roembke [199777]
Monica Amorim [176075]

SUBMITTER: Sue Robinson

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: This session is not associated with an Interest Group but is jointly sponsored by the North American Science Committee and the European Science Committee since the topic is timely and relevant to both geographic units. Chairs will be Markus Hecker, Sue Robinson,

TITLE: Quality Assurance and Control of Chemical and Toxicological Measurements

DESCRIPTION: State-of-the-art technologies and novel analytical approaches continue to push environmental scientists' ability to detect lower concentrations of emerging contaminants, identify novel exposure pathways and adverse outcomes to exposure, and determine the toxicological effects of environmental contaminant mixtures, among many other possibilities. These measurements and techniques could be used, or are being used, to make environmental health policy decisions. In order to make the best-informed decision, the results often need additional information regarding the quality assurance (QA) and quality control (QC) of the measurements. In addition, the comparability and reproducibility of qualitative results (e.g., identification of environmental exposure biomarkers) and quantitative results (e.g., calculation of dose-response curves) within and between laboratories can greatly depend on a thorough QA/QC program. Emerging non-targeted ("omics"-style) analytical techniques also have a significant need for QA/QC protocols for evaluating reproducibility and for interlaboratory comparison of non-targeted results. This session will be focused on all aspects of QA/QC for environmentally-relevant chemical and toxicological measurements. Potential topics of interest include: the development and application of novel Laboratory Information Measurement Systems (LIMS) to track variability of method performance and measurement results; interlaboratory comparisons of techniques or materials to determine reproducibility and accuracy of measurements; or the development and use of reference materials, or other quality control materials, for environmental toxicological or chemical measurements. The goal of the session will be to present multiple QA/QC aspects to the general SETAC community and to encourage adoption of QA/QC programs for future measurements.

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Benjamin Place [193875]

Jessica Reiner [180252]

SUBMITTER: Benjamin Place

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Chemists in SETAC (North America IG)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Recent Advances and Future Direction of Perfluoroalkyl and Polyfluoroalkyl Substances Research

DESCRIPTION: Over the years, the widespread presence of Perfluoroalkyl and Polyfluoroalkyl substances (PFASs) in environmental and biological matrices has gained global attention. PFASs, such as the long-chain perfluorinated chemicals including perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), are extensively studied due to the concerns of human health effects, bioaccumulation potential, and persistence. Global efforts to regulate these long-chain perfluorinated chemicals are on-going. Public concern and regulatory pressures have increased due to their persistence and potential toxicity and have led to the development of the next generation of PFASs and alternative chemistries (e.g., shorter-chain PFAS or entirely new chemistries). However, the safety and short and long term fate information of the alternatives is scarce. In addition, many newly recognized classes of PFASs are being identified and found in the environment. These chemicals may be potential precursors to PFOA, PFOS, and their homologues. The newly recognized classes of PFASs are primarily being developed to replace those compounds of concern and still maintain performance characteristics desired by consumers and industry. For example, in aqueous film forming foams (AFFF), many new classes of PFASs are recognized. The number of sites, particularly military bases and airports, where AFFF has been found to contaminate ground water, surface water, soil and sediment are rapidly increasing. Knowledge gaps remain for the complete understanding of sources, fate, and toxicological effects of these classes of chemicals. In addition, critical to assessing environmental fate and effects, there is need for analytical techniques for characterizing, identifying, and quantifying the unknown chemicals in legacy and next generation products. Lastly, new approaches to remediation and effective management strategies for mitigating and cleaning up affected areas is greatly needed. This session aims to focus on the following topics: •The research related to recent advances in analytical method development and chemical characterization of PFASs •Environmental monitoring of legacy and newly identified PFASs •Alternatives, substitutes and next generation chemicals •Sources, fate and transport of PFASs in environmental matrices •Toxicological effects on humans and wildlife •Biomonitoring and health reference values •Remediation technologies and strategies •Risk management

TRACK: Environmental or Analytical Chemistry

CHAIRS:

Marc Mills [177323]
Kavitha Dasu [190053]
Shoji Nakayama [182858]

SUBMITTER: Kavitha Dasu

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Recent Developments and Current Issues in Bioaccumulation Assessment

DESCRIPTION: Bioaccumulation is the net result of competing rates of the uptake of chemicals into an organism from the ambient environment and its diet and the elimination of chemical from the body via various processes. Assessment and categorization of bioaccumulation (B) potential is a typical requirement of national/regional regulations (e.g., REACH) and international agreements (e.g., the Stockholm Convention on Persistent Organic Pollutants) on chemical management. Many categorization schemes still rely heavily on the octanol-water partition coefficient (KOW) and bioconcentration factors in fish (BCF) for assessment purposes. Other metrics for bioaccumulation assessment, such as the bioaccumulation factor (BAF), biomagnification factor (BMF), biota-sediment accumulation factor (BSAF), trophic magnification factor (TMF) and total elimination half-life (t1/2) have also been proposed. A key process influencing B potential (and the congruency in B metrics across food webs) is biotransformation. While knowledge about biotransformation of organic chemicals has been increasing over the past decades through in vivo data compilations, QSAR development, in vitro method development and quantitative in vitro to in vivo extrapolation (Q-IVIVE), further work is clearly required. The objective of this session is to highlight recent research that can be incorporated into weight of evidence (WoE) approaches to assess bioaccumulation in aquatic and terrestrial environments including analyses of laboratory and field data and the use of in vivo, in vitro and in silico methods. Case studies are welcome as are informed perspectives on the regulatory implications of apparent discrepancies and/or uncertainties in bioaccumulation data compiled during B assessments.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Daniel Salvito [167980]

Karla Johanning [178325]

SUBMITTER: Daniel T. Salvito

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Bioaccumulation Science Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Remediation and restoration: assessing and measuring effectiveness for contaminated sediment
DESCRIPTION: Remediation is often driven by and designed to target human or ecological health risk objectives. Restoration, however, generally targets improvements in the ecosystem such as habitat, wildlife populations, or other beneficial uses for an aquatic system. Considering the complex interactions between contaminants, sediment, water, and biota, interdisciplinary approaches using multiple methods and metrics are required to completely assess the effectiveness of sediment remediation and restoration. Typically, chemical and physical measures are used to characterize sediment remediation. To assess these objectives, additional lines of evidence characterizing how the remediation affected contaminant uptake within the food web and subsequent exposures to target receptor(s) are required. Restoration activities, on the other hand, may be benchmarked to a reference condition or evaluations of population-level metrics. This session will focus on the development and use of innovative methods, multi-disciplinary approaches (a weight of evidence), and case studies that measure the temporal and spatial reductions in risk/impairment (both ecological and human health) following remediation and restoration at contaminated sediments sites. Approaches and case-studies that include combinations of innovative chemical measures (e.g., source apportionment, chiral chemistry, and other forensic approaches), biological measures (e.g., bioaccumulation measures, food web studies, metabolism, and biodegradation) and physical measures (e.g., sediment transport and electronic surveys) to develop multiple lines of evidence needed to assess remediation and restoration effectiveness will be highlighted. This session will be of interest to researchers, site managers, regulators, and stake holders.
TRACK: Remediation/Restoration
CHAIRS:
Marc Mills [177323]
David Walters [190065]
Amy Mucha [185523]
SUBMITTER: Marc Mills
PRELIM SESSION TYPE: Platform and Poster
INCLUDE IN SPECIAL SYMPOSIUM: FALSE
SUBMISSION COMMENTS:

TITLE: Revisiting Global Climate Change and its Influence on the Practice of Environmental Toxicology and Chemistry

DESCRIPTION: This ½ day platform session is designed to be of interest to a wide range of SETAC members including environmental toxicologists, ecologists, environmental chemists, risk assessors, public affairs professionals, and engineers. This topic was first addressed by SETAC members in 2011 with the first Pellston-style workshop on the influence of global climate change on the foundation and application of environmental toxicology and chemistry, and followed by seven publications in Environmental Toxicology and Chemistry in 2013 from this workshop. Since then there has been a slow and steady increase in the number of platform and poster presentations made at SETAC meetings, as well as an uptick in the number of climate change-focused papers in the SETAC journals IEAM and ET&C. The goal of this platform session is to highlight key insights and experiences gained from current research on the interaction between legacy and emerging contaminants and climate change. Our objectives are to have 4-6 invited presentations, and openings for 2-3 non-invited presentations, that will focus on areas such as stressor or exposure assessments, changes in field or laboratory approaches to evaluating changes in contaminant toxicity and fate profiles, new or unique methods in risk assessment designed to deal with multiple stressors, etc., among others. In addition, contributors will also be asked to address where the research on this topic should or could go in the future, with particular emphasis on SETAC activities.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Ralph Stahl [169563]

William Clements [161197]

SUBMITTER: Ralph G. Stahl

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: Given the recent election in the United States, the issue of global climate change and whether national policies and research funding will change, will be an important topic for many members. We believe this may warrant that the platform session be a special one, and perhaps could be designed to accommodate speakers from outside the SETAC membership.

TITLE: Risk Communication Toolbox

DESCRIPTION: Risk communication is the interaction between environmental risk assessment scientists, managers, policy makers and the interested public. With information readily available from the internet, mass media, and "24/7" journalism, communicators need to be cautious and thorough when interpreting and communicating information to stakeholders. Many environmental scientists, managers, and policy makers are uncomfortable in the role of risk communicator, and they have often overlooked the importance of being able to communicate effectively with the interested public. Therefore, risk communication remains one of the most underused tools for environmental management. The objective of this session will be to identify successful risk communication strategies as tools for use by science and risk communicators. Past SETAC risk communication sessions first highlighted case studies and lessons learned from high profile situations, second, shared stories about how risk communication could be used effectively for education and public outreach, and third, featured how those tools were used in policy and decision making. Thus, presenters in this session will provide case histories that underscore successful tools to help risk managers communicate in a variety of environmental situations. These tools and underlying strategies will be identified to help managers deal with many issues. For example, how to handle an emotionally charged situation, how to find out what the stakeholders' concerns are, how to build trust, how to better communicate information, such as explaining complicated topics to non-scientists without talking down to them, and understanding why a risk assessment may be misunderstood, etc. To this end, presentations will be sought from a variety of environmental situations to highlight risk communication done well and summarize strategies that can be used as tools in the risk communicator's toolbox. Presentations may include examples of unsuccessful risk communication methods. This session, sponsored by the Human Health Risk Assessment Interest Group and developed in coordination with the Global Science and Risk Communication Interest Group, has the potential to bring experts from government, industry and academia to review shared experiences about risk communication for human and ecological health, culminating in a "communication toolbox" that can be used by environmental scientists, managers, policy makers, and others in a variety of environmental situations.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Brian Mulhearn [163740]
Shawn Sager [171750]
Jacquelyn Clarkson [185570]
Namrata Sengupta [199436]

SUBMITTER: Brian Mulhearn

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Human Health Risk Assessment Interest Group (North America)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Screening and Prioritization Methods for Characterizing Risk of Contaminants in the Environment
DESCRIPTION: There are tens of thousands of chemicals that are used and produced that may potentially be released into the environment. In order to make informed decisions about which to focus on for further research, inclusion in monitoring studies, and developing standards, guidance values, and criteria, contaminants must be screened and prioritized. Often, the data available for toxicity and exposure measurements is not necessarily uniform across chemicals, making risk determinations difficult. Some prioritization and screening methods may be well suited for providing context for hazard or for exposure, but few are well suited to characterize risk. Additionally, many chemicals have little to no available toxicity or exposure data available at all. For these chemicals, alternative methods of analysis are necessary. The purpose of this session is to 1) offer a platform to present methods for prioritizing chemicals based on exposure and toxicity information that characterize risk, as well as to 2) explore advances in incorporating alternative methods to fill data gaps in contaminant prioritization.
TRACK: Integrated Environmental Assessment and Management
CHAIRS:
Ashley Suchomel [305994]
SUBMITTER: Ashley Suchomel
PRELIM SESSION TYPE: Platform and Poster
INCLUDE IN SPECIAL SYMPOSIUM: FALSE
SUBMISSION COMMENTS:

TITLE: SETAC North America Focused Topic Meeting: Risk Assessment of Chemical Mixtures

DESCRIPTION: Understanding the joint toxicity of complex chemical exposures is essential in protecting the environment and public health. In addition, chemical management initiatives across the globe have prompted the need for sound science to support oversight of chemical mixtures in the environment. Over the years, SETAC has held several events (e.g. SETAC Pellston Workshop®, SETAC Special Science Symposium, EFSA Colloquium) with the aim of reviewing the current state of the science and approaches for establishing mixture risk assessment and chemical management. The upcoming Focused Topic Meeting (FTM) on Risk Assessment of Chemical Mixtures (September 6-8, 2017) evaluates the interplay between scientific knowledge on the environmental hazard, exposure and risk of chemical mixtures and its consideration in chemical regulation and management. Participants are encouraged to present: • An overview of previous workshops/symposia to establish background knowledge on the subject of mixtures risk assessment; • Information and an overview on recent advances in our scientific understanding of mixture chemistry and toxicology; • Perspectives on the tools currently available and new tools needed to assist in more accurate risk predictions for mixtures; and • Current and proposed regulatory perspectives on mixtures risk assessment and the challenges of integrating the science of mixture toxicology into regulatory frameworks from multiple jurisdictions (Australia, Canada, Europe, and the USA). We encourage contributions from chemists, toxicologists, risk assessors and others working in this area, and especially those working across disciplines, to join us and participate by providing presentations on these topics to this session.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Eric Van Genderen [166860]

Mary Ann Ottinger [164908]

SUBMITTER: Eric J. Van Genderen

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: The Focus Topic Meeting on Mixtures Risk Assessment was prioritized by the SNA Science Committee in 2016 and this session proposal is one of the proposed deliverables.

TITLE: Soil Contaminants: Fate, Bioavailability, Environmental Toxicology for Application in Ecological and Human Health Risk A

DESCRIPTION: New methods for assessing risks posed by soil contaminants and the ever-expanding inventory of standardized protocols to measure soil toxicity have facilitated research on the fate, bioavailability, and toxicity of contaminants in soils worldwide. A current challenge is how to integrate these data into human health and ecological risk assessments. This session provides a forum for researchers investigating fate and effects of soil contaminants to report their latest results to concerned parties, and to discuss how this information can be used to generate more accurate assessment of potential risk. The session aims to facilitate discussions among soil environmental toxicologists, environmental chemists, risk assessors, regulators, and citizen groups. This session will provide participants with a comprehensive review of the diverse and challenging factors that affect fate, bioavailability, and environmental toxicology of contaminants in soil, as well as a discussion of emerging research and how these finding can be used to refine the risk assessment process.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Michael Simini [168940]
Ming Fan [165235]
Theresa Phillips [190629]
Yvette Lowney [302861]
Amy Gainer [311820]
Ruth Hull [162717]

SUBMITTER: Michael Simini

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Soils Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Solutions for Conducting Experiments With Difficult Substances

DESCRIPTION: Novel chemistries often present unique challenges when attempting to conduct studies in ecotoxicology and chemistry. Difficulties generally start with preliminary solubility and stability testing of a material with very low water solubility characteristics, or material that rapidly adsorbs to all test chamber surfaces. Preparation of test solutions for aquatic and terrestrial ecotoxicology testing is predicated by the results from the preliminary tests, as is the potential use of organic solvents. Because each chemical comes with its own unique challenges, a thorough review of the proposed dosing technique(s) for testing with difficult substances is necessary on a case-by-case basis. Points to consider include the test solution delivery method (i.e., static, static-renewal, flow-through), dissolution techniques, precipitate formation, potential impact of solvents on test organisms, complex test substances and mixtures, challenges expressing toxicity, and bioavailability of the test material under relevant exposure conditions. Without this knowledge, organism effects due to the test material may be under- or over-estimated in subsequent risk assessments. This session seeks submissions that describe novel and effective techniques for approaching difficult test substances that have application in environmental toxicology and chemistry.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Alan Jones [179769]
Matt McCoole [190263]
Henry Krueger [164565]
Alan Samel [167982]

SUBMITTER: Alan J. Jones

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Chemistry (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Stormwater and wastewater pollution: toxics, ecological sensitivity, and sustainable solutions for a healthy environment

DESCRIPTION: Stormwater and wastewater pollution is a growing concern in our aquatic environments. Stormwater runoff is water from rain or snow that washes over impervious surfaces such as parking lots, roads, or rooftops of various materials, as well as agricultural fields or feedlots. The compounds collected by the stormwater end up in the receiving water, creating a global aquatic pollution concern. Wastewater is permitted point-source discharge from publicly owned water treatment facilities (municipal) or industrial discharge. In some circumstances, a wastewater permit is required for stormwater runoff to surface waters. In the U.S., the EPA mandates that the effluent meet specified water quality standards for a select list of compounds, but there are numerous unregulated compounds discharged as well as exceptions such as mixing zones where discharged compounds can be above thresholds in place to protect aquatic life. Also of concern is combined sewer overflows in urban areas, where a shared pipe to transfer sewage and wastewater to a treatment plant is exceeded in capacity by surface runoff during wet weather. The consequence is untreated human and industrial waste, toxic materials, and debris poured directly into surface waters. Collectively, the contaminant levels in downstream waters are a public and ecosystem health concern, with compound mixtures including metals, persistent organic pollutants, contaminants of emerging concern, current use pesticides, among others. Runoff has been demonstrated to cause mortality in aquatic organisms, and existing contaminant levels have been associated with sublethal effects such as decreased growth and impaired reproduction that lead to delayed mortality events. Creating infrastructure that provides opportunity for stormwater to pass through sand and gravel, as it would in nature, is an immediate and effective solution to this growing problem. Such biofilters mimick pre-development conditions. Our objective for this session is to better understand and define the stormwater and wastewater problem, create action items for solutions from a regulatory and infrastructure standpoint, and capture immediate solutions to clean stormwater and wastewater before it enters nearby and downstream waters. We plan to recruit current faculty, research scientists, and students from the Washington State University Stormwater Center, the University of Washington Center for Urban Waters, and NOAA Ecotoxicology Program. The collective projects include cutting edge research using high-resolution gas spectrometry to identify pollutants in stormwater, highly sophisticated predictive modelling of pre-spawn mortality (PSM) in coho salmon which has been directly associated with stormwater runoff from roads, research investigating the cause of death and pollutant of concern for PSM in coho salmon, research exposing forage fish to stormwater, and low impact development options to clean up stormwater before it enters the receiving water which has been demonstrated to produce 100% survival of the aquatic species tested. Collectively, this will include 3-4 speakers. The Nature Conservancy has a dedicated research focus to Stormwater and concerns of toxics, and will be extended an invite to present. Similarly the Minnesota Pollution Control Agency has a stormwater management team, and will be extended an invite to present their research.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Jessica Lundin [194094]

Jenifer McIntyre [304030]

SUBMITTER: Jessica Lundin

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE
SUBMISSION COMMENTS:

TITLE: Sustainable Remediation/Restoration of Contaminated Sediment: Innovative Design and Monitoring Techniques

DESCRIPTION: Contaminated sediment sites each possess inherent features that necessitate unique sustainable strategies to satisfy remedial objectives. Recent technological advancements, in addition to a better understanding of the dynamic physical, chemical, and biological processes associated with contaminated sediments have provided opportunities for innovative, sustainable designs and associated monitoring techniques. Integrated remediation/restoration strategies can have mutually exclusive objectives, but require purposeful and effective communication with all stakeholders in order to gain consensus, concurrence, and necessary regulatory approval. Likewise, proactive community involvement and public outreach increases the likelihood that a novel remedial design or monitoring approach will be well-received. Definitive, appropriate, and achievable success metrics must be established to address stakeholder objectives and effectively measure success of the integrated program. This session is intended to showcase examples of novel, integrated remedial/restoration designs and/or associated monitoring techniques for successfully executed contaminated sediment programs; dissemination of this information among individuals of the scientific and stakeholder communities will further advance the level of acceptance of sustainable remedial approaches.

TRACK: Remediation/Restoration

CHAIRS:

Ceil Mancini [305002]

William Reese III [309914]

SUBMITTER: Cecilia Mancini

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Systems biology for ecotoxicology- from gene to ecosystem

DESCRIPTION: We will provide a cross-section of the OMICS approaches currently used in both model lab species and ecologically-relevant non-model species. This symposium will target those new to these Big-data approaches, as well as students and investigators currently undertaking such analyses. Organisms respond to natural or anthropogenic factors through the detection of such stimulatory or inhibitory inputs by changes in behaviours and physiology. Underlying this are the integrated responses of cells and tissues at the transcriptomic, proteomic and metabolomics levels. The ability to quantify the complete response to an environmental pollutant is thus approaching the possible. Application of these methods to ecotoxicology is at its infancy and remains challenging but progress is being made, especially for DNA sequencing, mass spectrometry and bioinformatic methods in non-model but ecologically relevant species. In some cases, these studies are well-advanced, while for others, it is at the very early stages. These methods are beginning to increase our understanding of the comparative responsiveness of species, and of adverse outcome pathways in multiple species. This session will be comprised of lead investigators and junior scientists, including graduate students at the cutting edge. Potential participants have not yet been contacted but could include D. Villeneuve (USA-EPA), C. Helbing (uVictoria), and the co-chairs, amongst other key investigators.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Vance Trudeau [170429]

Christopher Martyniuk [186763]

SUBMITTER: Vance Trudeau

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: OMICs (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: The Ecotoxicology of Elevated Major Ion Mixtures in Fresh Waters

DESCRIPTION: Major ions (Na+, K+, Ca2+, Mg2+, Cl-, SO42- and HCO3-) can become elevated in fresh surface waters due to a variety of anthropogenic activities including agriculture, road salt applications, resource extraction activities, and climate induced changes in precipitation/evaporation. While efforts to develop regulatory benchmarks for major ions have historically focused on individual ions (e.g., Cl-, SO42-), and more recently, integrative measures like conductivity, it has been clear for some time that responses to elevated major ion concentrations are complex, variable and strongly influenced by both the specific mixture of ions present and the taxonomic identity of the receptor exposed. A variety of research approaches have been used to try to understand the potential risks posed by elevated major ions, including physiological experiments, modeling, laboratory toxicity testing, mesocosm studies, and observational field assessments. A wide range of perspectives are sought from mechanistic studies at the (sub-) organismal level to community structure and ecosystem function responses to alternative assessment methodologies and regulatory approaches. Our hope is that the combination of perspectives will promote linkages necessary to better characterize and respond to the ecological risks of elevated major ions.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

David Soucek [169510]
Kevin Brix [164105]
Rasa Bubnyte [308344]
David Mount [163723]
Christopher Nietch [183537]

SUBMITTER: David J. Soucek

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Salinization of Freshwater (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: The emerging concept of neuroendocrine disruption: more than hormones are upset

DESCRIPTION: This session will introduce the audience to the emerging concept of neuroendocrine disruption. It will target a broad audience from students to investigators to industry and regulators that may not yet be familiar with this exciting new research area. In the last few years, it has become clear that a wide variety of environmental contaminants have specific effects on neuroendocrine systems in fish, amphibians, birds, reptiles and mammals. The emerging concept of 'neuroendocrine disruption' is now receiving considerable attention. The consensus definition delineated in 2014 is: "Neuroendocrine disruptors are exogenous substances found in the environment that alter normal neuroendocrine function and result in an adverse effect on the organism or population" (Olea et al. 2014. Gen. Comp. Endo. 203:158). This followed logically from earlier work (reviewed in Gore, 2008; Waye and Trudeau, 2011), Neuroendocrine disruption extends the concept of endocrine disruption to include the full breadth of integrative physiology (i.e., more than hormones are upset), including a systems biology approach. Pollutants may also disrupt numerous other neurochemical pathways to affect an animal's capacity to reproduce, develop and grow, or deal with stress and other challenges. Some of the effects of common pollutants such as PCBs, bisphenol A, estrogenic substances, nanoparticles, and anti-depressants like fluoxetine have both short-term and long-term transgenerational effects. We must now consider the impacts of neuroendocrine disruptors on reproduction, development, growth and behaviors, and the population consequences for evolutionary change in an increasingly contaminated world. Moreover, such chemicals might induce neuroendocrine disruption by targeting the gut-microbiome-brain axis, as bacteria within gut produce neurotransmitters and hormones that can act upon the host brain. This session will be comprised of lead investigators and junior scientists, including graduate students at the cutting edge. Potential participants have not yet been contacted but could include some of the following: H. Patisaul (NC State), E. Orlando (Maryland), C. Martyniuk (Florida), N. Basu (McGill), R. Tanguay, (Oregon State), F. Hoffmann (Federal Institute for Risk Assessment, Berlin), and the co-chairs (V. Trudeau and C. Rosenfeld), amongst other key investigators.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Vance Trudeau [170429]

SUBMITTER: Vance Trudeau

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Related to EDC testing and Life Cycle testing. I am proposing Cheryl Rosenfeld (University of Missouri) as a co-chair. She has agreed but is not yet a SETAC member, so her name does not register via the formal co-chair online section.

TITLE: The Future is Now: Scientific Strategies for Coping with an Unsteady State

DESCRIPTION: Evidence is mounting that we have well and truly entered the Anthropocene, in which human influence has dramatically altered the functioning of global ecosystems. Given the increasing occurrence and severity of impacts of climate change, and the recognition that anthropogenic contaminants are now found at the most remote locations, including the depths of the ocean, we might ask whether we have entered a new regime--one in which long-held scientific assumptions, established during a time when our influence was less dominant, may no longer hold. If so, what strategies do we have to deal with an environment where default values are no longer valid? Traditionally, scientific knowledge of environmental behavior has emerged from the collection of data over time in the field and laboratory, from which models have emerged (often from "average" behavior) or from development and agreement on standard process descriptions, finally resulting in a set of default values that can give a good "back-of-the-envelope" understanding of system behavior. In a world where past behavior no longer seems to be a predictor of future behavior, is such an understanding of the world still useful? How can SETAC, in its many varied interests, learn to deal nimbly with the rapidly changing world where the old "steady state" no longer applies? Or is this an alarmist idea, and, in fact, many of the paradigms we hold dear are still accurate? And how are we to tell the difference? For this session, we foresee recruiting a diverse panel of speakers to address the following urgent questions: -Are model default values, standard testing/experimental approaches, and sampling practices still valid and useful? -How can modelers, experimentalists, and field scientists work together to map out the "new normal"? -Does a "new normal" even exist, or have we moved beyond the realm of prediction? Our panel of speakers will ideally include modelers, regulators, field and lab scientists, to argue both "for" and "against" the idea that we need to abandon our historic understanding of environmental toxicology and chemistry. Potential speakers include: Thomas Backhaus (University of Gothenburg), Ian Cousins (Stockholm University), Miriam Diamond (University of Toronto), Beate Escher (Helmholz Centre for Environmental Research), Tom Harner (Environment and Climate Change Canada), Matthew MacLeod (Stockholm University), and Xenia Trier (European Environment Agency).

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Carla Ng [178093]

Martin Scheringer [176220]

SUBMITTER: Carla A. Ng

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: The Other 3 Rs: Remediation, Rehabilitation, Restoration - When Do You Get a Passing Grade?
DESCRIPTION: You have completed a risk assessment for your site, using several assessment endpoints and measures, and have concluded there are unacceptable risks. During remediation planning, you consider restoration goals, and develop a restoration plan. Following remediation, you implement the restoration plan. How do you develop a plan that works? Is habitat key (i.e., "if you build it they will come")? When is restoration to previous condition appropriate, and when should you consider rehabilitation to improve ecological function/services? How much monitoring is needed to know that your site is on the right trajectory? How do you know that you have met your goals? Is the evaluation different, depending on the contaminants that were present (e.g., volatiles vs. inorganics vs. bioaccumulatives)? Should you apply assessment endpoints and measures used in the risk assessment, or are more or different metrics needed to evaluate the condition of the restored site? In this session designed as a continuation to the Restoration of Impaired Ecosystems SETAC/SER Workshop, these questions will be addressed using examples from various terrestrial ecosystem case studies in wetland, upland, urban, or rural environments.
TRACK: Remediation/Restoration
CHAIRS:
Ruth Hull [162717]
Andrea Brady [164136]
Aida Farag [163573]
SUBMITTER: Ruth N. Hull
PRELIM SESSION TYPE: Platform and Poster
INCLUDE IN SPECIAL SYMPOSIUM: FALSE
SUBMISSION COMMENTS:

TITLE: The role of plasticity in evaluating the effects of environmental contaminants

DESCRIPTION: Integrating developmental and evolutionary biology into ecotoxicology research has provided critical insights into how exposure outcomes can be mediated by phenotypic plasticity. As an organism's phenotype is the product of the interaction between genes and the environment, toxicological outcomes resulting from environmental exposure to contaminants are not only the product of the dose, route of exposure, and species, but the environmental context in which exposure occurs. We know that genetic variation within and among species can significantly affect exposure outcomes. Altering developmental responses to environmental stimuli, including contaminants, can function to increase tolerance to that stressor (acclimation). However, adaptive responses can lead to trade-offs that impair an organism's ability to tolerate or respond to other environmental stresses. Incorporating interactions between organism's genetics and the environment can therefore provide a more holistic picture of how contaminants could be expected to affect populations in an ecological context. This perspective also provides insight into how organisms adapt to anthropogenic stressors and in turn influence other life history traits crucial for population persistence. In this session we aim to highlight how incorporating interactions between genetics and the environment can illuminate how organisms respond to and cope with environmental exposure to contaminants that can advance our understanding of these complex relationships to manage the environment for a sustainable future. This session is supported by the Global Interest Group for the Ecotoxicology of Amphibians and Reptiles.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Robert Flynn [196777]

SUBMITTER: Robert Wesley Flynn

PRELIM SESSION TYPE: Platform and Poster

ADVISORY GROUP: Ecotoxicology of Amphibians and Reptiles Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: The Science of Safer Chemistry: Researchers, Retailers, and Beyond

DESCRIPTION: The chemicals currently available in our economic landscape are under increasing scrutiny. Whether it's from governmental policymaking at the city, state, or federal levels or brand conscious businesses responding to consumer concerns, the search for safer substitutes and the establishment of chemical alternatives assessment as a practice is gaining momentum. The analysis and selection of safer chemical substitutes is an important step in moving Toward a Superior Future by fostering the use of materials with inherently lower hazard and persistence. Moreover, the communication of methodologies, tools, and successes to date will help spur the development of novel safer substances or new innovative uses. The goal of this session is to highlight the diverse set of players in the field of chemical alternatives assessments by spotlighting how they are approaching the Science of Safer Chemistry and overcoming current challenges. Perspectives will include not only those of regulatory decision-makers at all levels, but also retailers/companies managing brand risk, academia/research groups addressing critical research needs and tool development, or NGO's supporting research and awareness. The chairs will solicit presentations that will range in diversity from case studies novel substitution, tools for implementation, benign by design, filling data gaps (QSARs, high-throughput screening), high-level perspectives from decision-makers, application of life-cycle assessment (LCA), or summaries of detailed technical assessments. The session chairs have extensive experience in the field of chemical alternatives assessment, including collaborative engagement with various stakeholders: Cathy Rudisill of SRC, Inc., Chemistry Technical Manager overseeing contract technical support to the U.S. EPA Safer Choice Program. Co-chairing the session will be Dr. Jay Tunkel is a Principal Investigator at SRC Inc., a not-for-profit research and development firm, where he runs the environmental group. He has over 25 years of Program management experience and has overseen notable chemical assessment, methodology development, and tool creation projects including the EPA's Sustainable Futures initiate, EPA's Safer Choice projects, and the PBT Profiler, respectively. The chairs will solicit presentations from a diverse group including academia, governments, non-government organizations, consultants, and industry. Of particular interest will be to presentations that provide perspective not brought forward elsewhere, to address regulatory initiatives.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Catherine Rudisill [187784]

Jay Tunkel [166567]

SUBMITTER: Catherine Rudisill

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Unique Laboratory and Field Based Methods to Address Complex Environmental Issues

DESCRIPTION: Building upon last year's session titled "Alternative Approaches to Complex Environmental Challenges", this session will focus on the advancement of science through use of novel laboratory and/or field based research methods. The development of novel approaches to advance understanding of the complex environment will be an important tool in improving the link between bench and field. While standard methods are a critical piece of risk based decision making, there is an increasing need to develop new methods to better characterize environmentally relevant exposure, and/or site-specific effects. Examples may include using site specific animal models, unique experimental designs and exposure scenarios, new analytical techniques, or novel data analysis methods. This session seeks research-based submissions from the academic community, industry, and regulatory agencies. Ideally, the demonstration of these non-standard methods would include clearly defined case studies on environmental stressors, as well as the potential application of the methodology to broader uses in environmental toxicology and chemistry. Presentations by students and postdocs of research focused towards risk assessment, industry based activities, and other regulatory processes are of particular interest.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Aaron Edgington [184839]
Alan Jones [179769]
Brad Glenn [190128]

SUBMITTER: Aaron J Edgington

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS:

TITLE: Using Mesocosm and Field Study Results to Set Regulatory Thresholds for Pesticides: Challenges and Opportunities

DESCRIPTION: Aquatic risk assessments are performed by jurisdictions worldwide to ensure that uses of plant protection products meet regulatory protection goals. Typically, risk of a pesticide to aquatic organisms is assessed by comparing estimated concentrations in the environment to responses reported in the laboratory. The approach is initially generic in nature with highly conservative assumptions built in. When protection goals are not met with the screening-level approach, assessments move to increasingly complex and environmentally relevant methods to reduce uncertainty and bias and improve our understanding of risk. Higher tier assessments generally include use of refined models and/or non-standard mesocosm and field studies. Although the use of higher tier data and analyses in risk assessments improves the ecological and contextual representativeness of the assessments, communicating the results and linkage to the protection goal is a challenge. This session will provide a forum for sharing knowledge and experience in linking higher tier aquatic risk assessment approaches to protection goals for regulatory decision making. Abstracts demonstrating the use of higher tier experimental (e.g., laboratory, mesocosm, field-based) and theoretical (e.g., modeling) approaches to meet current and future regulatory protection goals are welcome.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Sean McGee [199190]
Paul Sibley [168923]
Dwayne R.J. Moore [163441]

SUBMITTER: Dwayne R.J. Moore

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: We request that the session be for an entire day as we believe the topic is of wide interest and we will be able to attract many excellent speakers.

TITLE: Whole Effluent Toxicity Testing: A Science Evolving - Perspectives, Alternatives, and Regulatory Limitations.

DESCRIPTION: Whole Effluent Toxicity (WET) when combined with chemical-specific analyses in the form of water quality standards and biological monitoring, can provide useful information to guide management decisions in environmental discharges. WET testing has been required since 1995 under the U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES). In 1998, USEPA tests methods were scrutinized, and subsequently in 2002 the methods were updated to ensure reproducibility, efficacy, and precision. With the required WET testing in the US, approved WET test methods continue to be applied in NPDES permits and use of effluent testing in other countries has been applied as monitoring by sector (Canada) or as direct toxicity assessments. This session will discuss the limitations of chemical-specific analysis methods, whether chemical-specific aquatic toxicity data is inadequate, and whether chemical-specific criteria adequately predicts the toxicity of chemicals to the aquatic environment in an effluent. While national accreditation programs (i.e., The NELAC Institute) and discharge monitoring requirements (DMRs) exist for laboratory and data consistency, are there enhancement needs in these programs? How can the knowledge exchange between the research community and regulators be strengthened? New test methods and strategies, endocrine disruption screening methodologies, in vitro assays, and various adverse outcome pathway (AOP)-based approaches, were developed with chemical environmental risk assessment in mind. Demonstrations of applied use of methods with WET tests are encouraged, along with discussion of how these methods could be implemented and applied to effluent assessment. Regulatory authorities are striving to incorporate new information into the regulatory assessment, while balancing needs and regulatory limitations. This is a challenging process, which necessitates the input from the scientific community. This session encourages presentation on various emerging areas for effluent assessments, alternative approaches used in WET testing, efficacies and limitations of WET test replacements, as well as discussions regarding regulatory perspectives and procedures for developing future methods. This session will include quality control and quality assurance measures recommended in toxicity testing methods, and mechanisms to improve procedures for establishing and documenting quality assurance for a variety of research topics.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

VelRey Lozano [309640]
Rami Naddy [164008]
Amy Bergdale [306990]

SUBMITTER: VelRey A Lozano

PRELIM SESSION TYPE: Platform and Poster

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS:

TITLE: Assessing the role of contaminants in the decline of prairie complex pollinators

DESCRIPTION: Already faced with drastic reductions in their habitat, numerous prairie ecosystem pollinators are currently experiencing further declines that have led to their consideration as state or federal species of concern. This session will examine what role contaminants, especially pesticides, may be playing in that decline and what research or regulatory mechanisms can assist with future protection of these ecosystems. Are butterflies and other terrestrial invertebrates effectively assessed in regulatory actions and are recent advances in risk assessment methodologies adequately characterizing the effects across species? How does their taxonomic relationship to target species of certain pesticides affect potential best management practices and mitigation strategies? Do toxicity testing and regulatory mechanisms that are species-specific adequately protect sensitive prairie ecosystems as a whole? This interactive platform will address issues related to these topics and explore solutions. We will take advantage of the meeting location to bring in local experts from surrounding areas representing zoos, non-profits, and state agencies with the goal of connecting people working to protect these local ecosystems, and also applying topics more broadly where applicable. It is our hope that discussions generated at this session continue beyond this meeting as participants apply principles explored to current projects.

TRACK: Terrestrial or Wildlife Toxicology and Ecology

CHAIRS:

Sarah Warner [195215]

Nancy Golden [165074]

SUBMITTER: Nancy Golden

PRELIM SESSION TYPE: Interactive Platform

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: We were particularly interested in holding this session at this time/location due to the potential local interest of this topic and our ability to bring in experts from surrounding areas that may not otherwise attend a national SETAC meeting, and have them interact with experts more broadly.

TITLE: Development of Microbial Environmental Resistance

DESCRIPTION: There are a number of papers and research that discuss the development of microbial environmental resistance. There is some debate on if what is observed in laboratory tests is actually occurring in the environment. There is also no agreement (in the environmental and microbial sciences) on what would truly identify if microbial resistance has occurred and what this definition is. There is complexity in understanding contributions to the selection of less susceptible bacteria in acomplex microcosm in vitro and in vivo and when "resistance" has developed and the mechanisms involved. The impact of such a selection is unclear, as is the fitness of the "selected" bacterial species following exposure to some xenobiotics. The session would initiate w speakers presenting on the possible mechanism of resistance, followed by laboratory results and research from environmental investigations.

TRACK: Aquatic Toxicology and Ecology

CHAIRS:

Marie Capdevielle [164955]

Geoffrey Scott [168579]

SUBMITTER: Marie C Capdevielle

PRELIM SESSION TYPE: Interactive Platform

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: If there is an interest group this would fit within - please advise.

TITLE: Integrated Understanding of Biogeochemical Cycling of Mercury around Ocean Environments

DESCRIPTION: Since the agreement of the Minamata Convention on Mercury was achieved in 2013, more than 35 nations have already ratified this convention. Ocean environment is one key media of concern, as current major exposure to mercury is coming from intake of ocean fish species in many countries. Then, integrated understanding on levels, transport, fate and bioaccumulation around ocean environment should be the key scientific basis to evaluate the long-term impact and effectiveness of the Minamata Convention. The session aims to discuss the topics on field survey of marine environments using ultra-trace Hg analysis, Hg isotopic analysis to indicate the fate processes, bioaccumulation through marine food webs, and chemical fate and transport processes and models integrating multimedia environment such as air, sea, land and sediments. We expect that fate process at the air-ocean interface and mineralization process in the upper ocean column may have key importance in the fate of mercury including methylmercury. The discussion in the session intends to share and achieve science of the topic among scientists and also students. We would expect 5-6 potential candidates of presenters according to our plan above as follows: Dr. Marumoto and Itai from National Institute of Minamata Disease, Japan, on field survey of ocean columns by ultra trace analysis of methyl mercury Dr. Kawai and Suzuki, National Institute for Environmental Studies, Japan, on global model of mercury to analyze biogeochemical fate around ocean environment Dr. Robert Mason or Kathleen Gosnell, University of Connecticut, USA, on field study on biogeochemical processes in ocean environment Dr. Takeuchi and Sakurai, National Institute for Environmental Studies, Japan, on characteristic isotopic fractionation in ocean fish, in relation to bioaccumulation Dr. Lars-Eric Heimbürger, Mediterranean Institute for Oceanography, France, on field survey of methylmercury production and bioaccumulation in ocean environments Dr. Seunghee Han, Gwangju Institute of Science and Technology, Korea, on field survey of ocean columns by ultra trace analysis of mercury species Noriyuki Suzuki and Kohji Marumoto hope to serve as co-chairs in the session, maybe with other co-chairs designated from organizers. Also we hope the session is designated as sponsored session with accompanying sub-title of "NIMD and NIES Joint Forum". This is our special request on this session proposal. We sincerely hope your kind consideration on this issue.

TRACK: Integrated Environmental Assessment and Management

CHAIRS:

Noriyuki Suzuki [165640]

Kohji Marumoto [313676]

SUBMITTER: Kohji Marumoto

PRELIM SESSION TYPE: Interactive Platform

ADVISORY GROUP: Bioaccumulation Science Interest Group (Global)

INCLUDE IN SPECIAL SYMPOSIUM: TRUE

SUBMISSION COMMENTS: We hope the session is designated as sponsored session with accompanying sub-title of “NIMD and NIES Joint Forum”. This is our special request on this session proposal. We sincerely hope your kind consideration on this issue.

TITLE: What made you become a successful science communicator? - Tell us!

DESCRIPTION: As SETAC scientists, we all have a science story to tell. These stories vary across sectors and disciplines as well as topics and audiences. Probably just as diverse as the array of stories are the tools available for timely and appropriate discourse. From the age-old lecture, to bite-size 140 character tweets, messages can be packaged in very different formats. Whether we communicate our findings with collaborators or granting agencies, educate students, or explain scientific concepts to non-scientists, we must take steps to communicate in credible and objective ways while being understandable and engaging to our audiences. This session is designed for conference attendees to share success stories, as well as failures, experiences, best practices, new tools for effectively communicating science (or new ways of using old tools), and methods for measuring communication success. We encourage presentations that represent various sectors, diverse topics, and different target audiences. We also encourage presentations on overcoming challenges such as working outside the traditional scientist's comfort-zone, conflicts in adhering to institutional policy vs. communicating in a socially responsible manner, or (re)building trust and credibility. This session is also a venue for sharing methods for communicating SETAC-related efforts (e.g., focus topic workshops, TSCA dialog) and the SETAC North America Public Outreach Committee's Strategy. Science communication happens at all levels and can be a useful tool to inform science-based decision making, encourage a new generation of scientists, and help promote a more scientifically literate public. By learning tips and tricks from colleagues, we can all become better communicators and foster successful science-based discourse and education. Come join us to learn about success stories, metrics for measuring success, best practices, and new tools for effective communication - and share your personal experiences communicating science!

TRACK: Linking Science and Social Issues

CHAIRS:

Sarah Bowman [196595]
Paul Sibley [168923]
Stuart Cohen [161218]

SUBMITTER: Sarah R Bowman

PRELIM SESSION TYPE: Interactive Platform

ADVISORY GROUP: Science and Risk Communication (EU)

INCLUDE IN SPECIAL SYMPOSIUM: FALSE

SUBMISSION COMMENTS: Co-sponsored by SNA Public Outreach Committee

TITLE: Wildlife ecotoxicology: linking exposure to effect cascades

DESCRIPTION: Wildlife, including amphibians, reptiles, birds and mammals, are exposed to a wide range of contaminants. Sometimes exposure is through direct contact or ingestion of the toxicant, while at other times it may be through food web transfer. In the former case, wildlife may be exposed to rather high levels of xenobiotics purposely released into the environment. Those can include plant protection products, insecticides or fungicides, or mammalian pest control products such as rodenticides. Effects of such acute exposure may be obvious, including mortality, although affected animals may be difficult to find in the field. In contrast, exposure through the food web is generally at relatively low concentrations, but chronic over time. Responses to such chronic exposures may be very elusive and difficult to partition from effects of other stressors. However, advances in molecular biology are improving our ability to detect such subtle perturbations. Generally, food web exposure does not result in direct mortality, but animals show lower fitness, and may be more vulnerable to other stressors. Linking subtle molecular or 'biomarker' effects to health of individuals can be challenging, and linking effects detected at the individual level, even mortality, to impacts at the population level is even more difficult. For both regulatory purposes and risk assessment, it is essential to obtain information on risks from both acute and chronic exposure scenarios, and to attempt to determine links between measurable biomarkers, other stress factors and implications for populations, and even communities. In this session we are soliciting presentations that provide insight into effects at both molecular and higher levels of organization, and in particular, studies that make credible connections between levels of organization and other environmental variables. This could include assessments that employ an Adverse Outcome Pathway (AOP) framework.

TRACK: Terrestrial or Wildlife Toxicology and Ecology
CHAIRS:
John Elliott [163275]
Barnett Rattner [166509]
Miguel Mora [163452]
Natalie Karouna-Renier [163648]

SUBMITTER: Tamar H Schlekat

ADVISORY GROUP: Wildlife Toxicology Interest Group (Global)